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ANNUAL REPORT

OF THE



SUPERINTENDING MEDICAL OFFICER,

*Together with the Reports on the following Departments of the Medical Service
of the Island, viz :*

THE PUBLIC HOSPITAL
THE LYING-IN HOSPITAL

THE LUNATIC ASYLUM
THE LEPERS' HOME

FOR

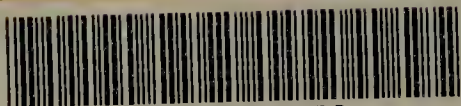
THE YEAR ENDED 31ST MARCH, 1915.

Ordered by His Excellency the Governor to be Printed.



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ISLAND MEDICAL DEPARTMENT

Report for the year ended 31st March, 1915.

Island Medical Office, Kingston, 22nd June, 1915.

Sir,

I have the honour to forward for the information of His Excellency the Governor the accompanying Returns and Reports, including the report of the Government Bacteriologist, embracing the period for the year which began on 1st April, 1914; and ended on 31st March, 1915.

APPOINTMENTS.

2. Dr. R. Mott-Trille was appointed D.M.O. of the Newport District of Manchester on 18.8.14.

Dr. R. F. Russell, Supernumerary Medical Officer, was appointed to act as Port Health Officer at Port Antonio on 5.8.14 until the end of the year.

Dr. A. M. Mills, of Montego Bay, was appointed to act as Port Health Officer for that port on 27.7.14 until the end of the year.

Dr. A. A. Anderson was appointed acting Supernumerary Medical Officer in charge of the Travelling Dispensary on 14.1.15.

Dr. W. I. Escoffery was appointed acting Supernumerary Medical Officer on 25.2.15.

Dr. A. E. Mayner was appointed Supernumerary Medical Officer on 28.4.14 and resigned his appointment after being placed in charge of the Travelling Dispensary.

Dr. J. H. Paterson was appointed Supernumerary Medical Officer on 10.4.14 and was transferred to Port Antonio to act as Port Health Officer. He resigned his appointment on 4.8.14.

Dr. E. A. C. Beard was appointed Supernumerary Medical Officer on 3.7.14, and was transferred, on application, to Grand Cayman on 21.1.15 as Government Medical Officer.

Dr. S. C. DePass was appointed Dental Surgeon to the Public Hospital as from 1.4.14. for the year.

RESIGNATION.

3. Dr. M. M. Meikle resigned his appointment on 17.8.14 in order to take up the Health Officership of Manchester parish.

LEAVE OF ABSENCE.

4. The following officers were granted leave of absence during the financial year:

Name.	Period of Absence.	Period during which absent.	Acting Officer.
Mr. J. E. Ker, S.M.O. . .	3 7/31 months	14.7.14 to 20.10.14	Dr. L. Gifford
Mr. D. G. Parsons, Snr. & Accounting Clerk	20 days	7.9.14 to 26.9.14	Mr. R. Lopez
Mr. C. Don, Medical Storekeeper & Secretary Quarantine Board . .	3 2/31 months	21.9.14 to 23.12.14	Mr. R. Gordon
Miss T. M. Wittingham, Matron Pub. Hospital . .	3 18/31 months	2.6.14 to 20.10.14	Miss M. Brooks
Miss E. M. Thompson, Matron Jub. Hospital . .	10 days	26.9.14 to 5.10.14	Miss E. Cameron
Do. do. . .	10 days	6.3.14 to 3.12.14	do
Mr. R. Lopez, Assistant . .	29 days	3.12.14 to 31.12.14	Mr. E. S. Hendriks
Mr. S. M. Dailey, Assistant	1 21/31 months	12.2.15 to 31.3.14	Mr. J. Reid
Dr. C. A. H. Thomson . .	14 days	7.3.14 to 20.3.14	Dr. G. H. K. Ross
Dr. G. Cooke . .	1 month	10.4.14 to 9.5.14	Dr. A. E. Mayner
Dr. J. H. Peck . .	15 days	1.5.14 to 15.5.14	Dr. M. M. Meikle
Dr. C. E. Harvey . .	5 months	7.6.14 to 6.11.14	Dr. W. D. Neish
Dr. C. A. Moseley . .	5 months	2.6.14 to 1.11.14	Dr. S. A. Issacs
Dr. F. H. Cooke . .	6 weeks	1.8.14 to 15.9.14	Dr. J. G. Moseley
Dr. G. H. K. Ross . .	2 months	1.8.14 to 30.9.14	Dr. A. J. Salmon
Dr. C. W. M. Castle . .	23 days	6.10.14 to 28.10.14	Drs. C. A. Thompson and A. E. Mayner
Dr. C. H. Farquharson . .	1 23/31 months	8.2.15 to 31.3.15	Dr. G. H. K. Ross
Dr. S. C. DePass . .	6 weeks	4.6.14 to 15.7.14	Dr. J. H. Clarke
Dental Surgeon Public Hospital			Dr. E. E. Melville

5. Return showing the daily total cost per patient, and the daily cost per patient for maintenance only at the several Public General Hospitals.

Hospitals.	Daily total cost per patient; exclud- ing D.M.Os. salary.		Daily cost per patient for maintenance only.
	s.	d.	d.
Morant Bay . .	1	0 $\frac{1}{4}$	5 $\frac{3}{4}$
Hordley . .	0	10 $\frac{1}{2}$	6
Port Antonio . .	0	10 $\frac{1}{4}$	5 $\frac{3}{4}$
Buff Bay . .	0	9 $\frac{3}{4}$	6
Annotto Bay . .	0	9 $\frac{1}{2}$	6
Port Maria . .	0	11 $\frac{1}{4}$	5
St. Ann's Bay . .	1	4 $\frac{1}{4}$	6 $\frac{1}{4}$
Cave Valley . .	1	6 $\frac{1}{2}$	5 $\frac{1}{2}$
Falmouth . .	1	5 $\frac{3}{4}$	6 $\frac{1}{2}$
Ulster Spring . .	2	9 $\frac{1}{2}$	8
Montego Bay . .	1	1 $\frac{1}{4}$	7 $\frac{1}{4}$
Lucea . .	1	3 $\frac{1}{2}$	6
Sav.-la-Mar . .	0	8 $\frac{1}{4}$	4 $\frac{3}{4}$
Black River . .	1	4	5 $\frac{1}{4}$
Mandeville . .	1	2	6 $\frac{1}{4}$
Chapelton . .	1	2 $\frac{1}{2}$	7 $\frac{1}{4}$
Lionel Town . .	0	10	4 $\frac{3}{4}$
Spanish Town . .	0	9	4 $\frac{3}{4}$
Linstead . .	1	0 $\frac{3}{4}$	6 $\frac{1}{4}$

6. Return of Expenditure of Island Medical Department for year ending 31st March, 1915.

	Personal Emoluments.	Other Charges.	Gross Expenditure.	Amount of Dues Collected.	Actual Expenditure after deducting Amount passed to credit of Hospital.	Amount of Grants. Estimated.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Head Office ..	2,635 2 5	6,428 0 2	9,063 2 7	1,684 11 8	7,378 10 11	9,339 15 5
District Medical Officers ..	5,982 9 7	..	5,982 9 7	..	5,982 9 7	5,850 0 0
Supernumerary Medical Officers ..	443 12 3	..	443 12 3	..	443 12 3	600 0 0
Temporary Outstations and Dispensary appointments ..	158 6 8	..	158 6 8	..	158 6 8	150 0 0
Public General Hospitals—						
Morant Bay ..	202 18 0	335 11 10	538 9 10	11 8 8	527 1 2	617 8 0
Hordley ..	284 16 0	721 3 5	1,005 19 5	30 16 8	975 2 9	1,060 8 0
Port Antonio ..	552 7 3	1,806 3 3	2,358 10 6	102 15 1	2,255 15 5	2,371 5 0
Buff Bay ..	623 3 0	1,985 14 5	2,608 17 5	10 6 8	2,598 10 9	2,731 17 0
Annotto Bay ..	486 0 2	1,537 7 7	2,023 7 9	38 16 8	1,984 11 1	1,839 15 0
Port Maria ..	395 3 6	837 11 9	1,232 15 3	25 8 0	1,207 7 3	1,562 3 0
St. Ann's Bay ..	239 15 11	308 4 4	548 0 3	8 11 9	539 8 6	627 9 0
Cave Valley ..	64 0 0	102 7 10	166 7 10	12 1 0	154 6 10	194 8 0
Falmouth ..	210 8 0	169 14 9	380 2 9	7 2 6	373 0 3	535 5 8
Ulster Spring ..	55 12 2	55 0 2	110 12 4	3 1 1	107 11 3	199 0 0
Montego Bay ..	306 4 0	693 12 9	999 16 9	6 17 8	992 19 1	1,017 16 0
Lucea ..	235 7 3	283 14 6	519 1 9	27 16 5	491 5 4	597 11 0
Sav-la-Mar ..	511 3 11	1,090 3 11	1,601 7 10	29 19 8	1,571 8 2	1,984 17 0
Black River ..	222 4 6	240 8 6	462 13 0	7 10 8	455 2 4	523 14 6
Balaclava ..	..	42 18 4	42 18 4	..	42 18 4	520 2 0
Mandeville ..	231 15 4	392 16 0	624 11 4	3 15 4	620 16 0	674 8 0
Chapelton ..	294 1 6	525 19 11	820 1 5	20 9 2	799 12 3	890 6 0
Lionel Town ..	386 18 8	724 19 8	1,111 18 4	21 6 3	1,090 12 1	1,219 2 0
Spanish Town ..	474 3 4	1,273 7 9	1,747 11 1	38 8 1	1,709 3 0	1,781 6 1
Linstead ..	272 0 4	428 7 1	700 7 5	4 13 10	695 13 7	818 4 0
Yaws Fees ..	1,981 6 2	..	1,981 6 2	..	1,981 6 2	2,800 0 0
Investigation into Vomiting Sickness ..	..	42 4 0	42 4 0	..	42 4 0	100 0 0
Drugs and Poisons Law ..	13 5 6	..	13 5 6	..	13 5 6	17 0 0
Medical attendance on Immi- grants ..	528 5 8	..	528 5 8	..	528 5 8	540 0 0
Public Hospital ..	5,293 6 2	5,575 18 9	10,869 4 11	725 15 4	10,143 9 7	11,501 10 6
Lunatic Asylum ..	6,900 12 5	13,436 6 5	20,336 18 10	9,826 19 2	10,510 0 8	20,405 0 11
Lepers Home ..	908 6 9	1,609 9 1	2,517 15 10	..	2,517 15 10	2,547 0 0
Victoria Jubilee Hospital ..	602 18 9	641 0 4	1,243 19 1	545 6 1	698 13 0	1,450 14 9
Vaccination Fees ..	1,718 15 8	..	1,718 15 8	..	1,718 15 8	1,752 0 0
Medical Officer, General Peni- tentiray ..	250 0 0	..	250 0 0	..	250 0 0	250 0 0
Health Officer, Port Royal ..	450 0 0	..	450 0 0	..	450 0 0	450 0 0
Quarantine ..	740 10 10	1,221 4 8	1,961 15 6	746 1 0	1,215 14 6	1,462 2 0
Central Board of Health ..	..	19 1 9	19 1 9	..	19 1 9	25 0 0
Medical Council ..	..	..	..	..	..	20 0 0
Total ..	34,655 1 8	42,528 12 11	77,183 14 7	13,939 17 5	63,243 17 2	81,026 9 1

7. VOLUNTEERS WITH THE ROYAL ARMY MEDICAL CORPS FOR SERVICE DURING THE WAR.

During the past year by special request of the officer in charge of the Royal Army Medical Corps, Dr. Harold Scott was given permission to attach himself for duty at Camp in order to help in the medical work there due to shortage of Medical Officers. Dr. Scott was on duty at Camp from 6.8.14 until 11.10.14, and resumed duty again on 2.11.14.

As Dr. Scott was, at one time an officer in the Army Medical Department, a better selection could not have been made inasmuch as he is well acquainted with the working of that Department.

2. Dr. J. G. Moseley, unpaid Assistant District Medical Officer to the Port Antonio District, was given permission to volunteer for service and left the Island on 12th November, 1914.

3. Dr. R. F. Russell, Supernumerary Medical Officer, was given permission to volunteer for service with the Army in Europe and left the Island on 1st April, 1915.

4. Dr. Cyril Gideon, D.M.O. of the Gayle District, was in like manner given permission as from 1st April, 1915, to go to Europe and volunteer for service with the Army.

6. Dr. D. L. Tate, a private practitioner at Port Maria, who on several occasions has acted as D.M.O., volunteered for service in Europe, and on arrival in England was appointed to Aldershot, Cambridge Military Hospital. The last report said that he was under orders for the front.

8. *Value of Drugs, etc., issued to the various Institutions, etc., from the Island Medical Stores during the financial year 1914-1915.*

	£	s.	d.
Value of drugs and sundries issued to the Public General Hospitals, Lepers Home and Medical districts	2,651	8	4
Value of stimulants issued to Public General Hospitals and Lepers Home	52	0	11
Value of drugs, etc., issued to Kingston Public Hospital	886	19	7
“ drugs, etc., issued to Travelling Dispensary	242	4	2
“ drugs, etc., issued to Jubilee Hospital	34	2	7
“ stimulants issued to Jubilee Hospital	1	4	6
“ drugs, etc., issued to Lunatic Asylum	275	9	5
“ stimulants issued to Lunatic Asylum	9	17	11
“ drugs, etc., issued to Prisons and Reformatories	144	15	6
“ stimulants issued to Prisons and Reformatories	11	15	4
“ drugs issued to Department of Agriculture	8	2	11
“ drugs issued to Quarantine Station and Visiting Officers	6	9	0
“ drugs issued to Schools Department	6	13	6
“ drugs, etc., issued to Parochial Boards	558	3	10
“ stimulants issued to Parochial Boards	47	9	0
“ drugs, etc., issued to Constabulary Department	50	9	6
“ quinine in packets supplied to Post Offices, etc.	275	0	0
“ drugs and sundries sold	90	3	10
“ lymph issued to District Medical Officers	371	13	0
“ quinine issued to Schools	79	3	6
“ quinine issued to Estates	135	10	0
	5,938	16	4

9. During the year there were two general examinations under Law 34 of 1894 at which 26 candidates presented themselves, including 9 from the Kingston Public Hospital. Fifteen candidates satisfied the Examiners, including seven from the Kingston Hospital, and were granted Licenses.

The receipts from candidates amounted to £26 and the expenses in connection with the examination amounted to £13 5s. 6d.

REGULATION REGARDING LAW 34 OF 1894.

10. During the year it was decided to make the preliminary examination in general subjects that has to be passed by students who wish to become licensed Dispensers somewhat more severe than it has been in the past in order, if possible, to obtain a better educated and generally higher class of Dispensary Student than in some cases has been entering the Dispensers profession recently.

By a new Regulation passed in Privy Council on August 25th, 1914, all those who wish to present themselves for the final examination in Pharmacy must produce a certificate showing that they have passed the Cambridge Junior examination or its equivalent in general subjects as a guarantee that they have some general knowledge, while Latin must be one of the subjects in which they have passed in order that they may understand the Latin words used in Pharmacy.

11. Return showing the number of cases prosecuted at the instance of the constabulary for violations of Law 34 of 1894—The Drugs and Poisons Law, during the year ended 31st March, 1915.

Parish.	Nature of Offence.	Date of Trial.	Result.	Remarks.
St. Andrew	Retailing Indian Root pills without being licensed	15.12.14	Fined 30/ or 21 days H.L., D.P.	Fine paid
St. Mary	Breach of section 25 of Law 34 of 1894—not entering in his poison book the name and address of a purchaser of poison also the quantity sold	19.3.15	Fined 5/ & cost 2/ or 7 days H.L. Richmond Lock-up.	Fine and cost paid

VACCINATION.

12. The following are the results of the last seven years including the year under review.

Year.	Success-ful.	Not suc-cessful.	Did not return.	D.M.O.	Constables.	Registrars.	Totals.
				£ s. d.	£ s. d.	£ s. d.	£ s. d.
1908-9	21,662	705	562	970 14 0	254 8 8	226 19 8	1,451 2 9
1909-10	22,786	653	461	1,054 8 0	279 5 8	257 1 1	1,590 14 9
1910-11	23,106	617	559	993 5 0	259 1 3	246 17 5	1,499 2 7
1911-12	19,784	2,933	663	757 7 0	215 10 5	251 17 5	1,224 14 10
1912-13	26,103	393	343	649 14 8	1,034 3 6	248 6 11	1,932 5 1
1913-14	29,219	1,207	591	1,390 5 0	370 5 6	216 8 10	1,976 19 4
1914-15	21,575	1,249	549	1,183 11 0	322 15 2	212 9 6	1,718 15 8

Since 13.7.14 the Department has been obtaining its vaccine from the United States. Several complaints have been made during the last few months about the absence of good results, and representations have had to be made on the subject, and an interview was had with the firm's traveller who will, it is hoped, have the matter investigated and put right.

On account of the large number of failures in the years 1911-12 and 1913-14 the Department had to change the source from which it obtained its vaccine lymph.

Owing to the absence of a weekly direct line to England just now the obtaining of the lymph from England is of course, out of the question.

The payments made are as follows:—

One shilling for each successful case to the D.M.O.

Threepence for every case brought out to the District Constable.

Twopence to the Registrar for every birth notified.

The above is the return for last and some previous years.

The children of the island are protected against smallpox, but very little re-vaccination takes place, consequently one may say that the adult population are very poorly protected if at all.

YAWS.

13. For economical reasons the old and original system under which cases of yaws are seen by the D.M.O. of a district once and prescribed for, the subsequent treatment being left to the District Constable, has had to be introduced again on a limited scale in substitution for the system by which several visits were paid to patients.

It has always been a question as to whether the recent system of allowing several visits to be paid by Medical Officers has been a success and the extraordinary number of cases unearthed by the Travelling Dispensary would tend to show that numbers of cases have either never been treated at all or that the system has been a distinct failure.

On this account it was decided to fit up a Travelling Dispensary with a small tent hospital of 12 beds attached to it.

Yaws Return without Salvarsan treatment, 1914-15.

Parish.	District.	D. M. O.	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.
St. Andrew	Stony Hill	R. S. Turton	27									
	Gordon Town	C. E. Sharp	462	95	1	3						
St. Thomas	Morant Bay	T. M. Bartlett	487	28	5							
	P. G. River	F. R. Evans	79	13	4							
	St. Davids	A. T. Clarke	440	159								
Portland	Manchioneal	T. A. Dryden	303	191	115	48						
	Port Antonio	J. G. Moseley	45									
	Buff Bay	H. J. George	236	3	2							
St. Mary	Annotto Bay	H. Joslen	257	71	43	3						
	Richmond	F. A. Ritchie	276									
	Gayle	C. S. Gideon	175	36	4	5	7	16				
St. Ann	St. Ann's Bay	A. E. C. Myers	22									
	Moneague	A. G. Curphey	10	1								
	Cave Valley	Geo. Hargreaves	27									
	Dry Harbour	W. E. Wilson	17									
Trelawny	Ulster Spring	E. V. Smith	20	6		1						
	Duncans	F. A. G. Purchas	80									
	Falmouth	G. P. Campbell	164									
St. James	Montego Bay	G. W. Thomson	118									
	Adelphi	H. G. Johnston	163	15	7	2	2	3	1	1	1	1
Hanover	Lucea	F. H. Cooke	280									
Westmoreland	Little London	F. A. Sinclair	96									
	Lambs River	R. G. Sherlock	565	62	17	6						
St. Elizabeth	Balaclava	W. O. Lofthouse	202	145	37	43	18	3				
	Pedro and Southfield	R. M. Stimpson	61									
Manchester	Mile Gully	W. G. Farquharson	206	32	128	53						
	New Port	R. Mott Trille	34									
	Ditto	M. M. Meikle	14									
Clarendon	Four Paths	E. R. C. Earle	127									
	Crofts Hill	H. T. Strudwick	152									
St. Catherine	Spanish Town	J. H. Peek	592	10								
	Linstead	L. M. Clark	804									
	Old Harbour	F. O. Simpson	512	8								
Total			6,553	875	363	164	27	22	1	1	1	1

Return of cases of Yaws treated with Salvarsan in the several Public General Hospitals and Medical Districts during the year 1914-1915.

	First attacks.	Recurrent attacks.	General Yaws.	Crab Yaws.	Injection.			Cures.	Still under treatment.
					Intravenous.	Intramuscular.	Per Rectum.		
Hospitals ..	536	44	537	43	..	575	5	561	19
Districts ..	143	..	129	14	..	143	..	143	..
Travelling Dispensary ..	876	(Not available)			..	..	..	227	649
	1,555	44	666	57	..	718	5	931	668

TRAVELLING DISPENSARY.

14. This Dispensary, to which is attached a tent hospital to accommodate 12 patients, was originated on His Excellency's suggestion with a view specially to the treatment of Yaws, also with a view to giving Medical relief to those who are not paupers and thus entitled to poor relief, but who nevertheless are too poor to pay the usual fee to which the D.M.O. is entitled and who are too poor to pay the lowest relief ticket fee for attendance in the country districts, namely 2/.

There are many of the peasantry and many labourers and their families who cannot afford 2/ out of possibly a weekly wage of 5 /, 6/ or 7/ consequently the Travelling Dispensary is intended to reach a class of person who is, according to the present system of medical fees and arrangements, practically unprovided for.

With regard to the treatment of Yaws the same system is carried out as before—that is, that the District constable warns the cases and orders them to attend at a certain place and hour on a certain date when they are treated. Any case that the Medical Officer in charge of the Dispensary thinks would be better treated in the Tent Hospital attached to the Dispensary service is admitted for a few days.

It is also the duty of the Medical Officer to revisit cases of Yaws that have been treated and follow them up until cured so that the haphazard way at times carried out in past times of trusting to the District Constable to verify cures will, it is hoped, be done away with.

The Dispensary itself consists of a cart fitted up with medicines, dressings, etc., just as in a Dispensary with rows of bottles filled with drugs, etc., etc.

This dispensary cart is drawn by two mules and makes trips into the country from its headquarters as required.

The Dispensary's Headquarters are at present on the Hazelymph property in Westmoreland parish, two miles from Cambridge and three miles from Montpelier station.

The position is a good one, being on a small ridge overlooking the Great River, with a drop on, either side and a drop towards the road which goes from Hazelymph to Belvedere, affording excellent drainage.

This piece of ground has been very kindly lent to the Travelling Dispensary by Mr. F. H. DeLisser, who has refused to accept any rent therefor, and has in conjunction with the Overseer of the property, Mr. Harris, done everything he can to help in every way possible, and make the concern a success. The thanks of the Department and, it may be added, of the Government, are due both to Mr. F. H. DeLisser and to Mr. Harris for their kindness.

The Dispensary works in conjunction with a small Travelling Tent Hospital composed of 8 tents and a moveable kitchen and the whole staff consists of 1 Medical Officer, 1 Dispenser, a nurse, a cook and 2 men.

As soon as one district is cleared of Yaws as far as can be ascertained, the Hospital and Dispensary will be moved elsewhere. Mr. Maurice Malcolm has been kind enough to offer a new site on his property also free of charge as soon as a change of site is considered necessary.

The present range of district lies roughly with Mackfield on the west, Anchovy on the north, Ginger Hill on the south and Mocho on the east.

WORK DONE.

The Dispensary and Hospital which started work on February 8th, 1915, up to the 31st March or something under 2 months, had treated with Salvarsan 876 cases of Yaws, of whom 227 were returned as cured, the rest being still under cure. In addition to this 90 cases of Hookworm have been treated, while 253 patients have been admitted to Hospital.

It is also intended as soon as the Medical Officer in charge has sufficient time at his disposal, that he should assist general sanitation and public health by giving lectures on sanitation and disease with the aid of a magic lantern which the Schools Department has got out from England. This he could very

well do at the School houses, but for the present the work being new, he has his hands full and cannot spare the time.

The following is a return of the work done during the seven weeks that the Dispensary and Hospital have been running:

Remaining in Hospital on 1st April, 1915—Coolies, nil. Creoles, 11.
 Total admissions to hospital during 1915 to March 31:—Coolies, nil. Creoles, 253. Total 253.
 Discharged from hospital during 1915 to March 31st:—Coolies, nil. Creoles, 242. Total 242.
 Died in hospital during year 1915:—Coolies, nil. Creoles, nil. Total nil.
 Remaining in hospital on 31st March, 1915:—Coolies, nil. Creoles, 12. Total 12.
 Largest daily number in hospital or any day and which day:—Coolies, nil. Creoles 23. Total 23.—31st March.
 Daily average in hospital during 1915:—Coolies, nil. Creoles 13.2. Total 13.2.
 Smallest daily number in hospital on any day:—Coolies, nil. Creoles, 1. Total 1, 20th February.
 Mortality rate in hospital:—Coolies, nil. Creoles, nil. Total nil.

(a) Cases of Yaws admitted to Hospital—Total	..	..	96
(b) Cases of Syphilis admitted to Hospital	..	..	1
(c) Cases of Hookworm infection admitted to Hospital	..	..	154
Cases of malaria admitted month by month to Hospital—			
(a) creoles—2 in March			
(b) Coolies—Nil			
Generally including Hospital and Dispensary work in the country (that is inclusive of all work done by Hospital and Dispensary).			
Number of Yaws cases cured by one injection	..	..	227
Number cured and requiring 2 injections	..	..	Nil
Number cured and requiring 3 injections	..	..	Nil
Number cured and requiring more than 3 injections	..	..	Nil
Number still under treatment	..	..	649
Number that have failed to return and that have been prosecuted for not returning	..	..	Nil
Cases of Syphilis treated by Salvarsan or neosalvarsan outside the Hospital to March 31st	..	..	9
Cases of Syphilis treated in Hospital by Salvarsan or neosalvarsan to March 31st	..	..	Nil
No. of cases of above in which symptoms were cured to March 31st	..	..	Nil
Number of Syphilis cases still under cure	..	..	9

QUININE DISTRIBUTION.

15. Return showing the amount of Quinine supplied from the 1st April, 1914, to 31st March, 1915.

		No. of 5 gr. doses.	lbs.	ozs.
Police for own use	..	44,450	= 31	12
Police for sale	..	4,000	= 2	13
For distribution to Schools	—No. of 5 gr. doses		24	
“	“ 3 “		24	
“	“ 2 “		6	
“	“ 1 “		11	
			65	
Post Offices for sale—Packets of 5 grains	..		320,000	
“ “ 3 “	..		3,000	
“ “ 2 “	..		2,000	
“ “ 1 “	..		1,000	
			326,000	
			lbs.	
Estate doses of 5 grs., 189,700	..	..	135½	
Parochial Boards, 5 grs., 700	..	..	½	
Hospitals and Asylums, gr. 5-32,900	..	..	23½	
Total receipts minus police and departments—£410 10s. 0d.				
Hospitals and Asylums, Quinine Sulph. in powder—194lbs. 14 ozs.				
Parochial Boards, Quinine Sulph. in powder—15 lbs.				

RETRENCHMENT.

16. During the year under review the greatest care has had to be taken in the expenditure of money; and the equipping and opening of Ba'aclava hospital which was down on the estimates for the year has had among other items to be indefinitely postponed and every care has had to be exercised in the matter of expenditure, so much so that the total departmental savings at the end of the financial year amounted to £3,842 14s. 6d.

The estimates for the year 1915-1916 as passed in Session of the Legislative Council during the month of March show a reduction of £6,109 6s. 8d. on the medical estimates.

PORT MARIA HOSPITAL.

17. It is satisfactory to be able to record the fact that the old hospital (formerly a Rum store) at Port Maria has been vacated and the new buildings situated on a site chosen by the late Governor on a Hill just below and to the north of the poorhouse, a mile out of Port Maria, have been taken over by the department. The transfer began on February 23rd and was completed on February 26th, the patients themselves being removed on February 25th. The new buildings consist of an office block including office, dispensary, laboratory, etc., over which the dispenser lives, 3 large wards, that will in an ordinary way hold 40 patients each and many more in case of emergency, an infective diseases block, operating room, quarters for matron, nurses and servants and an excellent laundry with two cauldrons for boiling water, post mortem room, etc., porters lodge. Each ward has a verandah which for the present is screened.

The lavatories are attached to the wards with a cross ventilated passage between, while next the lavatories are the bathrooms—each ward having its own bathroom and shower bath.

In spite of the fact that the old hospital buildings were so unsuited for use as a hospital one cannot but compliment Dr. Lecesne, the present D. M. O., of the Port Maria district and hospital, on the wonderful improvement brought about by him in the old hospital during the time that he was in charge.

In the matter of coolies alone the change for the better is shown by the deaths recorded, which were as follows in the undermentioned years:—

1911-12—26 deaths. 1912-13—15 deaths. (Dr. Lecesne took charge.)

1913-14—15 deaths. 1914-15—11 deaths.

ULSTER SPRING PUBLIC GENERAL HOSPITAL (Cottage).

18. This Cottage Hospital was opened on September 15th, 1914. As is known Ulster Spring is far removed from any General Hospital and the necessity for such an institution in the upper part of Trelawny has often been shown.

The hospital has 6 beds and is fortunate in having water laid on by pipe from a neighbouring enclosed Spring some way above it, thus relieving it of the danger of want of water at any time, the spring never having been known to give out.

NEW WORKS—1914-1915.

19. *Morant Bay*—Embedding of iron chest in concrete. Erection of a flagstaff.

Hordley—Screening of a portion of large male ward.

Port Antonio—Erection of an intercepting tank in connection with the sewerage system.

Buff Bay—Embedding of the iron chest in concrete.

Annotto Bay—Removal of Matron's quarters to a position between the Dispenser's quarters and the sea.

St. Ann's Bay—Erection of a flagstaff.

Falmouth—Erection of a new chimney. Erection of a flagstaff. Erection of two shelves in the dispensary.

Ulster Spring—Erection of a mortuary.

Montego Bay—Erection of a new kitchen. Erection of a new bathroom. Erection of a wooden staircase instead of the stone steps leading from the male ward. Erection of a window and door in the lower male ward. Erection of a flagstaff.

Lucea—Erection of a flagstaff.

Sav.-la-Mar—Erection of a galvanised iron fence at the northern boundary of the hospital.

Chapelton—Installation of water pipes in the buildings and compound.

Port Maria, Cave Valley, Black River, Mandeville, Lionel Town, Spanish Town and Linstead—No new works.

Out-patient Department connected with the Hospitals.

20. The returns from the various hospitals are as follows:—

Hospitals.		1914-15. Number seen.	1913-14. Number seen.
Morant Bay	.. ..	658	577
Hordley	.. ..	193	189
Port Antonio	.. ..	1,809	9
Buff Bay	.. ..	889	324
Annotto Bay	.. ..	206	615
Port Maria	.. ..	582	612
St. Ann's Bay	.. ..	674	972
Cave Valley	.. ..	17	25
Falmouth	.. ..	551	624
Ulster Spring	.. ..	19	..
Montego Bay	.. ..	3,040	1,231
Lucea	.. ..	1,117	1,451
Sav.-la-Mar	.. ..	30	206
Black River	.. ..	1,099	1,409
Mandeville	.. ..	291	293
Chapelton	.. ..	751	577
Lionel Town	.. ..	623	648
Spanish Town	.. ..	2,029	1,122
Linstead	.. ..	1,983	1,009
		<hr/> 16,561	<hr/> 11,893

Return showing the number of patients treated under the Ticket system:—

Parish	1/	2/	3/
Kingston	472	100	..
St. Andrew .. ..	..	8	..
St. Thomas .. ..	..	17	..
Portland .. ..	..	66	..
St. Mary .. ..	..	83	..
St. Ann	3	72	8
Trelawny .. ..	..	..	..
St. James .. ..	..	6	1
Hanover	8	8	..
Westmoreland .. ..	..	17	..
St. Elizabeth	4	6	..
Manchester .. ..	..	26	..
Clarendon .. ..	..	10	..
St. Catherine .. ..	..	1	..
	487	420	18

It will be noticed that this system is becoming almost a thing of the past. Some years ago in Kingston the service used to be a very valuable one but inasmuch as a 2/ fee is now commonly accepted there is not so much need for this reduced fee system in Kingston.

In the country, as has often been remarked, the system is comparatively little used, due doubtless to the mileage fees“ ” that have to be paid by those needing the visit of a medical officer at their homes.

DISTRICT PATIENTS SEEN.

21. The returns are as follows for the present and the 2 previous years:—

	1912-13.	1913-14.	1914-15.
Constables	2,838	2,520	2,687
Prisoners	3,780	4,898	5,394
Paupers	11,914	10,918	6,152
Immigrants	16,027	23,346	24,809
Parochial midwifery cases	77	122	116
Casual paupers	10,529	9,231	9,896
Coolie midwifery cases	21	31	17
	45,186	51,066	49,071

HOOKWORM INFECTION.

22. On Monday February 1st Dr. H. H. Howard, Inspecting Medical Officer of the Rockefeller International Health Commission arrived in Kingston in order to make enquiries about the incidence of Hookworm disease and infection in Jamaica.

On Tuesday February 2nd, he travelled accompanied by myself to Stony Hill, where he interviewed the D. M. O., Dr. Turton, who showed him various insanitary spots, and then to St. Mary's parish where he visited Annotto Bay and Port Maria hospitals and villages, also in company with the D. M. O.'s, Drs. Joslen and Lecesne, the following estates, Frontier, Nonsuch, Coleraine, Greys Inn, with reference to (a) the mode of living of the labourers on the estates; (b) the class of latrine with which they are provided.

On Wednesday February 3rd, another journey was made on this occasion to the Parish of Clarendon—Lionel Town and Chapelton hospitals were inspected and Morelands and Amity Hall estates were visited and some investigation was made into the class of latrine generally in use in the villages of the parish. Dr. Howard was accompanied in their own districts by Drs. Cassidy and Thomson.

Rain unfortunately interfered with the inspection on February 3rd.

On Thursday February 4th, Dr. Howard made further investigations as to the cost of carrying out a systematic Hookworm investigation and left the island in the evening of the same day.

It is to be hoped that some permanent benefit will result to this Island from Dr. Howard's visit.

It is proposed that the investigation should start in one or two districts and extend gradually—the matter is now under consideration.

Number of cases thymolised at the various Hospitals.

Hospitals.	..	Creoles.	Coolies.	Outpatients.	Total.
Morant Bay	..	3	131	..	134
Hordley	..	14	102	26	142
Port Antonio	..	52	201	62	315
Buff Bay	..	43	391	..	434
Annotto Bay	..	66	3,354	6	3,426
Port Maria	..	8	513	..	521
St. Ann's Bay	..	70	1	2	73
Cave Valley	..	22	..	..	22
Falmouth	..	99	..	..	99
Ulster Spring	..	19	..	2	21
Montego Bay	..	117	133	..	250
Lucea	..	85	1	..	86
Sav.-la-Mar	..	4	1,117	..	1,121
Black River	..	99	57	10	166
Mandeville	..	122	..	6	128
Chapelton	..	64	..	..	64
Lionel Town	..	260	392	1	653
Spanish Town	..	51	499	5	555
Linstead	..	186	11	1	198
		1,384	6,903	121	8,408

Return showing number of indentured immigrants that have been thymolised on the estates during the year:—

Districts.	No. thymolised.
Morant Bay	..
Hordley	.. 12
Manchioneal	.. 18
Port Antonio	.. 46
Buff Bay	..
Annotto Bay	..
Port Maria	..
Richmond	.. 91
Montego Bay	.. 60
Adelphi	..
Sav.-la-Mar	..
Little London	..
Grange Hill	..
Black River	..
Alley	..
Spanish Town	..
Linstead	..
	227

Unfortunately it seems impossible for some reason or other to have the coolies regularly thymolised on the estates in the same manner as they are given quinine.

Systematic thymolisation would doubtless prevent a good deal of illness. However, owing to the fact that there are no dispensers on the estates as there are in British Guiana there seems to be no one as far as can be gathered who can or will supervise this work and see it properly done on the estates. The sending of coolies to hospital simply to be thymolised would be a waste of public money when it could so easily, with a little supervision, be done on the estates

Stools examined locally at the Public General Hospitals, for Hookworm.

Hospitals.	No. examined.		No. found infected.	
	Coolies.	Creoles.	Coolies.	Creoles.
Morant Bay	11	89	2	21
Hordley	1	..	1	..
Port Antonio	64	125	34	79
Buff Bay	..	..	..	..
Annotto Bay	290	76	234	62
Port Maria	..	..	..	..
St. Ann's Bay	..	..	..	..
Cave Valley	..	32	..	21
Falmouth	..	..	..	..
Ulster Spring	..	32	..	18
Lucea	..	25	..	11
Montego Bay	..	..	..	..
Sav.-la-Mar	639	4	403	3
Black River	..	..	..	..
Mandeville	..	..	..	..
Chapelton	..	..	..	..
Lionel Town	3	2	1	2
Spanish Town	438	32	141	24
Linstead	..	..	..	..
	1,446	417	816	241

Examination by Government Bacteriologist.

Stools sent up to Dr. Scott from Hospitals for examination for Hookworm:—

Hospitals.	No. examined.		No. found infected.	
	Coolies.	Creoles.	Coolies.	Creoles.
Morant Bay	..	..	..	..
Hordley	78	33	63	25
Port Antonio	..	..	..	..
Buff Bay	459	45	391	43
Annotto Bay	27	4	26	3
Port Maria	311	3	288	3
St. Ann's Bay	1	220	..	139
Cave Valley	..	3	..	1
Falmouth	..	178	..	99
Ulster Spring	..	..	..	..
Lucea	..	41	..	40
Montego Bay	180	163	141	113
Sav.-la-Mar	..	..	..	..
Black River	28	224	10	103
Mandeville	182	..	129	..
Chapelton	..	169	..	120
Lionel Town	139	244	124	73
Spanish Town	..	..	..	..
Linstead	18	234	11	181
	1,423	1,561	1,184	943

Examination of Stools at the Spanish Town Prison.

Total cases examined	..	2,492
Infected	..	1,186

The examination at Spanish Town Prison is naked eye examination. Were a microscope used in each case the percentage of infection would naturally be much higher.

23. Report by Dr. Grabham on Hookworm infection at the General Penitentiary.

S. M. O.,

235, or about 61% of 376 newly admitted prisoners tested in the Penitentiary during the year ended March 31st, 1915, were found infected with Hookworm. Eight of these were profoundly bloodless and dropsical and had to be kept in hospital several months under treatment before being sent out to work.

Most encouraging results are being obtained from the use of a strong infusion of Quassia (bitter wood) as suggested by Dr. Barnes of British Guiana, British Medical Journal, January 16th, 1915, page 114. Fresh material of *Picræna excelsa* Lindl. was obtained through the kindness of Mr. W. Harris, of Hope Botanic Gardens. 150 grains of the chips are used to a pint of water in preparing the infusion, this is found more efficacious than the B. P. strength (88 grains to a pint). Large numbers of other worms,

pin, round and whip worms—are expelled in many cases as well as Hookworms. Six ounces of the infusion are given with two ounces of Mist Alba early in the morning. The results with Quassia compare so favourably with those obtained from thymol that, for reasons of safety, the use of the latter drug has been entirely discontinued since January. Material has been obtained and will be tried shortly of another kind of bitter wood, known locally as Majoe-bitter, *Picramnia Antidesma*. L. W.

A series of 25 selected cases were treated with large doses of a strong freshly prepared decoction of Wild Tansey, *Ambrosia artemisifolia* L., which has a local reputation as a vermifuge, but without apparent results, for on being tested afterwards in the ordinary way with thymol were found to be heavily infected. The fresh plants were obtained through the courtesy of Mr. A. N. Dixon, Lime Hall, St. Ann. Enquiry was made for material of the English Tansey. *Tanacetum vulgare* L., a well known anthelmintic said to have been introduced into Jamaica about a century ago and to have become wild. There are no recent records of its existence here and the herbarium at Hope has no specimens.

M. GRABHAM.

April 7th, 1915.

24. SANITATION ON THE ESTATES.

Herewith are attached the reports of the various Medical Officers in charge of Estates on which indentured immigrants are employed.

One can only say that there is much room for improvement inasmuch as it will be seen that some estates have apparently no latrines at all.

Morant Bay, April, 1915.

Sir,

In compliance with your circular No. 708 dated the 4th March, I have the honour to report that:

(1) The sanitary condition of the barracks and their surroundings on the Estates under my charge where coolies are employed, are as satisfactory as circumstances admit, and the buildings are in good order and cleanly kept. It is not possible in some cases to avoid conditions favouring malaria when rains have been prevalent.

(2) Quinine is regularly administered to indentured immigrants, I am informed.

(3) Latrines are properly constructed, and have overhead coverings.

I have, etc.,

T. M. BARTLETT, D.M.O.

There are pit closets on each estate—on Lyssom and Nutt's River these are quite substantial floored buildings with zinc roofs. At Belvidere they are thatch roofed with wattled sides, floor and squatting board; so also at Brown's Gully.

T. M. BARTLETT, D.M.O.

8th May, 1915.

The Suptg. Medical Officer,
Kingston.

S. M. O.

The latrines have been constructed in accordance with pattern furnished and in addition boards placed to prevent users falling in, the approaches are kept bushed. But as I have said before the latrines are very little used, and as the immigrants go out early to the fields and return late, it is difficult to see how to mend matters in this respect.

T. M. BARTLETT.

7.4.15.

S.M.O.

I am sorry this paper was oversighted. Details were given as regards above in a previous communication as follows:—

- (a) Lyssons—a substantial floored and zinc roofed building, lime and earth used in pit.
- (b) The same at Nutt's River.
- (c) Wattle and thatched structures at Belvedere with floor boards.
- (d) So also at Brown's Gully, roofs of thatch.

T. M. B.

7.6.15.

Golden Grove, 9.4.15.

Sir,

Re circular 708 dated 4th March, 1915.

(1) The sanitary condition of the houses occupied by the coolies in my district is on the whole good. With regard to their surroundings, on account of the rains at certain times of the year there is on some estates a lot of stagnant water to be seen near the barracks. Otherwise the surroundings are in a fairly sanitary condition.

(2) I understand that quinine is not administered regularly on the estates. That sometimes it is given regularly and then for weeks none is given. I am not in a position to prove this assertion in all cases, but in some instances the Overseers have admitted that it is true.

(3) The latrine system is absent only on one estate, "The Rhine," where coolies have recently been located. At "Pera" there is a trench but no overhead covering.

I have, etc.,

F. R. EVANS, D.M.O.

The Suptg. Medical Officer,
Kingston.

Manchioneal, April 1st, 1915.

Hon. S. M. O.

Sir,

In reply to circular 708, I have the honour to submit the following report on the sanitary condition of the barracks, etc., on the estate under my charge.

1 The barracks and surroundings were kept in a clean condition throughout the year. These were whitewashed on several occasions, free drainage being insisted on by trenches which are cleaned regularly.

2. Quinine is regularly administered to the immigrants, 5 grs. daily.

3. The latrines are good. These are of the pit system and have overhead coverings. I may state that I have noticed that as a rule they are not being used.

I have, etc.,

T. A. DRYDEN.

Port Antonio, 12th April, 1915.

Sir,

In reply to circular No. 708 dated the 4th instant, I beg to report as follows:—

(1) The barracks provided for the coolies are satisfactory on all the estates in my district. They are sanitary, and the grounds round them are kept clean.

(2) Quinine is regularly administered to the coolies.

(3) The latrine system is in use, the latrines are all properly made and are all provided with overhead covering.

I have, etc.,

C. A. MOSELEY, D.M.O.

The Suptg. Medical Officer,
Kingston.

Buff Bay Hospital, 23rd April, 1915.

Sir,

I have the honour to acknowledge the receipt of circular No. 708 dated March 4th, 1915, and in reply to state as follows:—

The estates in my district where indentured labour is employed are in a fairly sanitary condition.

There are now only two such estates, Paradise and Midlayton. Trenches surround the barracks at Paradise, and they are kept clean. The barracks on Midlayton are within two chains of the sea, they are always clean and sanitary. There are no latrines on Midlayton estate owing to the proximity of the sea.

The latrines on Paradise are built after a plan that was recommended a year or two ago.

There is no overhead covering.

I am unable to say if quinine is regularly administered.

I have, etc.,

H. J. GEORGE.

The Suptg. Medical Officer,
Kingston.

Annotto Bay, 13th April, 1915.

The Suptg. Medical Officer.

Sir,

I have the honour to acknowledge the receipt of circular No. 708 relative to the sanitary condition of the barracks and their surroundings on the estates on which indentured immigrants are employed, under my charge.

Upper Fort Stewart.—The barracks require whitewashing. The trenches around the barracks should be kept cleaner, otherwise the sanitary condition is good.

Lower Fort Stewart.—The barracks are well situated as regards elevation and sanitary surroundings, but the buildings are old and dilapidated and require whitewashing.

Quinine is administered regularly on Fort Stewart. The latrines have been allowed to fall into disuse, but latterly they have been re-erected, and some attempt is being made to induce the coolies to make use of them.

Golden Grove.—The barracks require repairing generally, cleaning up and whitewashing. The coolies complain that the walls are not wind and water proof. There is too much long grass surrounding the barracks which should be kept down. Quinine is administered regularly. The latrines have been allowed to become overgrown with bush and no attempt appears to be made to induce the coolies to use them.

Iter Boreale.—The barracks situated near the Bookkeeper's house are old, and the coolies complain that they are neither rain nor wind proof. They require whitewashing. They are well situated and the sanitary surroundings are good. The two barracks at Marking Stone are in good order, well situated, and have good sanitary surroundings. Quinine is administered regularly on the estate. The latrines have been neglected and allowed to become overgrown with bush. No attempt appears to be made to try and induce the coolies to use them.

Lady Hole.—More attention should be paid to condition of the gutters and trenches which should be kept cleaner than they are. The buildings should be whitewashed. Quinine is administered regularly. The latrines have been entirely neglected and are now overgrown with bush.

Osborne.—Barracks and surroundings in good sanitary condition. Buildings should be regularly whitewashed. Quinine is administered regularly. There are no latrines.

Fort George.—The buildings require more frequent whitewashing. Quinine is administered. The latrines have been allowed to fall into disuse.

Grays Inn.—The barracks are well situated on rising ground with a good slope which ensures good drainage, but the trenches around the barracks should be cleaned more often.

The buildings are all in good order and the surroundings are kept clean. Quinine is administered regularly. The latrines have been neglected, but are now receiving attention.

Aqualta Vale.—There are two sets of barracks on this estate in which indentured immigrants are housed, one on the Rosemount and the other on the junction road. The former are in good order and the surroundings are clean; there are no latrines. The latter are also in good order and repair, but like the others have no latrines.

Quinine is administered regularly.

Chovey.—These barracks are well situated on sloping ground at good elevation and the surroundings are clean and free from bush. Quinine is administered regularly. There are no latrines.

Orange Hill and Newry.—The barracks on these two properties are close together. They are placed on well chosen ground with a good slope which ensures drainage, but the trenches round the individual barracks should have more attention paid to them, a good many of them are filled with debris and some of them are choked with weeds. At the back of and partly between these two sets of barracks on the brow of the hill, the ground is in a most insanitary condition. The coolies have made this their latrine, and it is impossible to move off the tracks without running a great of risk treading in filth, while the stench is most obnoxious. The latrines have entirely disappeared, and nothing remains to indicate where they were. Quinine is administered.

Coleraine.—The barracks are placed on high ground with good drainage and clean surroundings. Quinine is administered regularly. There are no latrines.

Green Castle.—The barracks are situated on sloping ground affording good drainage, and at a good elevation above sea level.

The buildings are old and require cleaning and whitewashing. The trenches are choked with debris and bush, and very little attention is paid to them. The ground surrounding the buildings is choked with low growth. Quinine is administered regularly. There are no latrines.

Sheerness.—The barracks and surroundings are clean and in good order. Quinine is administered regularly. The latrines have been allowed to fall into disuse, and here also as elsewhere very little effort is made to induce the coolies to make use of them.

Nutfield.—The barracks and surroundings are clean and in good order. Quinine is administered regularly. The latrines are kept up here, but the management does not seem able to induce the coolies to make use of them.

Rosend.—The barracks in use by the indentured immigrants are well situated. The buildings do not comply with the regulations as laid down for those in use by indentured immigrants, being made of wattle and daub, and not raised sufficiently off the ground. The surroundings are well drained and clean. Quinine is administered regularly. There are no latrines.

Water Valley.—The barracks for indentured immigrants are placed on the top of a hill in open pasture land, and are well situated in every respect. The buildings are in good order. Quinine is administered regularly.

The latrines have been allowed to fall into disuse.

If the owners and attorneys of the properties in the Annotto Bay district would take a more serious view of the disastrous effects of the Hookworm disease, and would make some determined effort on definite lines to compel the coolies to make use of the latrines some good might be accomplished. The Medical Officer can only direct and advise, and it is up to the owners to see that their managers carry out the suggestions in detail persistently, and without their whole-hearted co-operation nothing definite will ever be accomplished.

I have, etc.,

H. JOSLEN, D.M.O.

Port Maria, April 28th, 1915.

Sir,

I have the honour to acknowledge receipt of Circular 708 of the 4th ultimo, relative to the sanitary condition of barracks on estates under my charge, and in reply to state the following:—

(1) *Frontier.*—Barracks, excellent; site, ideal; drainage, perfect; compounds kept clean. No breeding places for mosquitoes. Water supplied by pipes from town mains. Latrines, small moveable structures, well made.

(2) *Wentworth.*—Barracks, well kept and admirably placed on rising ground, therefore drainage is good. Compounds are always clean, no breeding places for mosquitoes. Water supplied by pipes from town mains which have been recently laid down. Latrines, approved type, moveable, and trenches well built.

(3) *Trinity.*—Barracks of prescribed form and well built. The top barracks are well situated on high ground with good drainage; but bottom barracks are on low lands and are damp in wet weather. Compounds clean. Water supplied by pipes from town supply. Latrines moveable, covered structures, well built.

(4) *Brimmer Hall.*—Barracks, well built on high ground. Drainage, perfect. Compounds, clean and tidy. Latrines, good type, moveable; same as on Trinity Estate. Water supplied by pipes from town main.

(5) *Unity.*—Small barracks, but on admirable site and well built. Compounds, clean. Water supply from neighbouring spring. Latrines, well built, covered structure; trenches well made.

(6) *Nonsuch & Tremolesworth.*—Barracks, of prescribed form and well built. Compounds always well kept; drainage, perfect on both estates. Water supply small stream which runs through both estates. Latrines, the old condemned open latrines have recently been replaced by structures of approved type, which is a great improvement. All that is now wanted on these estates is a good water supply.

Quinine Administration.—Instructions are given for administration of 5gr. tablets twice weekly, and on Frontier and Trinity for a daily dose of same amount, but I cannot say whether my instructions are carried out or if carried out whether the coolies swallow the tablets. Anyway there is a still further reduction in the number of Malaria fever cases admitted to Hospital.

I have, etc.,

G. I. LECESNE, D.M.O.

The Suptg. Medical Officer,
Kingston.

Richmond, 1st April, 1915.

The Suptg. Medical Officer,
Kingston.

Sir,

In reply to your circular No. 708 dated 4th March, 1915, I have the honour to forward the following report on the sanitary condition of the estates on which indentured immigrants are located in the Richmond Medical District.

The dwellings in which the coolies live have been kept in good state of repair during the year; the older barracks with beaten earth floors are gradually being replaced by floored buildings with benefit, I think, to the immigrants. The surroundings of the barracks on the whole, have been kept in good sanitary order; sometimes the trenches provided for carrying off storm water have been found on my monthly visits of inspection to be overgrown with bush and littered with refuse; these have always, however, been cleaned up when I called attention to them.

The latrines have not been a success for two reasons:—

1. Improper construction,
2. Lack of water supply.

The open trenches have proved a failure; the coolies do not use them, and they fall into disrepair. I am of opinion that when proper latrine accommodation is provided the immigrants will use them. The most sanitary and comparatively inexpensive form of latrines, I think, would be small covered and floored sentry boxes in the floors of which a small round square hole is cut. These sentry boxes can be placed over trenches and moved from place to place as the trenches become insanitary and have to be covered in. Water of course is necessary for the coolies to use. On estates where no pipe supply is available each coolie might be made to provide a quart bottle of water daily for his use and keep these bottles near the latrines.

Quinine is administered on the estates, but I do not think with regularity.

FRED. A. RITCHIE, D.M.O.

S. M. O.,
Kingston.

Montego Bay, 28th April, 1915.

Sir,

In reply to circular No. 708 dated 4.3.15, I have the honour to submit the following report:—

1. The sanitary condition of the barracks for coolies on the estates under my charge, is good.
2. I am assured by the Managers of the Estates that Quinine is regularly administered to the immigrants—daily doses of 5grs. each, and 10gr. twice a day to any immigrant who complains of headache, fever and chills.

3. The latrine system at present on the estates was erected according to plans supplied by the Department, but they are very defective as there is no overhead covering and it requires some practice to balance one's self on the bar used as a seat. I am getting the latrines altered and having them erected according to the Bye-Laws of the Health Board of this Parish, made under Law 35 of 1910.

I have, etc.

GEO. THOMSON.

S. M. O.,

* The plans were sent to the Estates by the Immigration Department after a visit made by Mr. Doorley, the Protector of Immigrants, and Dr. Neish; of course I understood that the plans had been approved by the Island Medical Department.

GEO. WM. THOMSON, D.M.O.

13.5.15.

Sir,

Glasgow, Adelphi P.O., April 1st, 1915.

In reply to Annual Report Circular No. 708 I beg to state:—

(1) The sanitary condition of the barracks at Rose Hall is satisfactory and remains as in former reports.

The barracks at Latium are somewhat defective as regards state of the roof, but otherwise in good order.

(2) I believe so.

(3) At Rose Hall the latrines are not used by the coolies.

At Latium the latrines are used by native employees living in the same compound as the coolies and I am unable to say whether the coolies use them or not although it is probable that they do so to some extent.

(Extract from my letter to you of Nov. 21st, 1914.)

I have, etc.,

H. G. JOHNSTON.

The Suptg. Medical Officer,
Kingston.

* The plans were not devised by this Department at all.—ED.

Sav.-la-Mar, April, 29th, 1915.

The Suptg. Medical Officer,
Kingston.

Sir,

In reply to circular No. 708, March 4th, 1915, I have the honour to state that the following estates are in my district, viz.:—Shrewsbury, Friendship, Barham, Blue Castle and Meylersfield; and the sanitary condition of the barracks and their surroundings on all these estates may be considered satisfactory.

2. I am unable to say positively whether quinine is administered regularly to the indentured immigrants on the estates. I am informed that it is.

3. I have nothing to add to or detract from what I said last year with regard to the latrines, and I am perfectly convinced that under existing circumstances it is impossible to make coolies use their latrines, and it does not appear to matter what the construction of these latrines may be, they will not use them.

I have been informed by a gentleman who has had to do with coolie labour on sugar estates in other countries that the same trouble was experienced with regard to the use of latrines by indentured immigrants there.

I have, etc.,

CHARLES E. HARVEY, D.M.O.

All the latrines except those on Meylersfield consist of pits. The Meylersfield ones have concrete surfaces on a level with the surrounding earth on which the fæces fall.

They all have squatting boards except Shrewsbury and Blue Castle. Only those at Meylersfield and Barham are covered.

There has been no change in any of the latrines since last year, and they remain just as useless as ever.

C. E. H., D.M.O.
7.5.1915.

Little London, 31.3.15.

S. M. O.,

Kingston.

In reply to your circular No. 708 I have to state:—

(1) Coolies are located on only one estate in my district, viz.: Retrieve; the barracks consist of one large building, floored, boarded and roofed with zinc, and of one other structure similar to that, but with a thatched roof. On new Hope which is really a part of Retrieve, there is a large building which was formerly part of the estate works. It is substantially built of mason work, floored and zinc roofed. All these buildings are in good order and well kept.

At Retrieve the drains around the buildings have at times water lodging in them and I have drawn the attention of the Overseer to this. The land is very flat and it is not easy to get the drains to take off all the water.

(2) 5 grains of quinine are given to each coolie every morning.

(3) The latrines that were made some time ago have been abandoned as they were found to be very unsatisfactory. The pit was dug in clay and was always full of water in which the fæces was dissolvent, and the stench was unbearable. I instructed the Overseer to fill the pits up and to erect an ordinary latrine with dry earth. This is by far the best arrangement, the fæces can be periodically removed and buried or disinfected, and the latrine kept clean.

F. A. SINCLAIR, D.M.O.

Grange Hill, 27.4.15.

Hon. S. M. O.,

Sir,

I have the honour to reply to your circular 708 and beg to say that the general sanitary condition on the estates in my district, viz.: Frome, Fontabelle, Belleisle, Paul Island, and Mount Eagle are on the whole satisfactory. The drains are cleaned fairly regularly, and the surroundings cleared of bush.

The latrines on all these estates were built on more or less the same plan—wattled sides and roofed with zinc, except one which was roofed with thatch. Pits over these in some instances a wooden perch, in others a broad board. They are seldom used by the immigrants. At Frome and Fontabelle the immigrants destroyed the sides making use of them as firewood. During my visit in February I gave instructions for these to be rebuilt, but found the same condition existing in March when I again issued the same instructions.

Quinine is usually administered regularly, but occasionally there is laxity in this direction.

Mount Eagle.—The latrine system used here is the usual pit. There are two latrines, in the male one a wooden perch is over the pit, in the female a broad board. The male latrine is a wattle sided zinc roofed construction, the female wattle sided and thatch roofed.

Frome.—The latrines are the same as the male one at Mt. Eagle.

Fontabelle.—Here as at Frome the latrines are made on the same plan as the male latrine at Mount Eagle.

Belleisle.—There are four latrines here; two of them are constructed on the plan of the Mount Eagle male latrine, while two have a broad board over the pit instead of a perch.

Paul Island.—The two latrines here are similar to those of the other estates, one having a broad board over the pit, the other a perch.

W. H. BEARD, D.M.O.

Black River.

Sir,

I beg to reply.

1. Sanitary condition fair, latrine erected.
 2. Quinine regularly administered.
 3. Latrine provided covered with zinc.
- Holland the only estate in this district.

I have, etc.,

J. H. CLARKE, Atg. D.M.O.

The Suptg. Medical Officer,
Kingston.

Lionel Town, May 21st, 1915.

Hon. S. M. O.,

With reference to your reminder re circular 708 of 4.3.15, which was referred back to me on the 6th instant for further information regarding the sanitary conditions of coolie barracks in this district, I regret that I appear to have mislaid the report.

The information required referred to the latrines at Moneymusk Estate, whether they are roofed or not.

The reply is in the negative.

2. Information was also required on the subject of Quinine distribution and whether any organised attempts have been made to secure regular distribution.

Beyond impressing on Overseers the importance of its distribution from time to time no organised efforts have been made. The figures for malarial admissions for the year afford evidence that quinine is distributed. The total admissions for the year show a marked decrease on those of the previous year.*

I have, etc.,

M. T. CASSIDY.

Spanish Town, 1st April, 1915.

Reply to Circular No. 708, 4th March, 1915:—

1. Sanitary condition of barracks and surroundings are clean and in good order on Blair Pen Estate where 9 coolies are located, ex Indus, May, 1911.
2. Quinine is administered by the Overseer of the estate to the indentured immigrants.
3. Latrines are trenches properly made but seldom used and by few.

J. H. PECK, D.M.O.

Linstead, 12th April, 1915.

Sir,

In reply to your circular No. 708, dated the 4th ultimo, I have the honour to report as follows:

Worthy Park.—The sanitary condition of the barracks and surroundings is in good order. Quinine is not regularly administered. No latrine has been provided.

Pear Tree Grove.—The barracks are in good condition, but surrounding need constant attention. Quinine is regularly administered. The latrine is old, dilapidated and unsafe. It is given as an excuse that it has been allowed to get into this condition as the immigrants would not make use of it.

Rio Magno.—Barracks and surroundings are in excellent condition. Quinine regularly administered. There is latrine accommodation provided but not used.

Riversdale.—Barracks in good condition but surroundings need some attention. Quinine administered. No latrine accommodation.

New Hall.—Barracks need some lime washing and surroundings and drains cleaning. Quinine administered. Latrine old and dilapidated and not used.

Hyde.—Barracks and surroundings are satisfactory. Quinine regularly administered in wet seasons. Latrine old and unsafe and not used.

I have, etc.,

L. M. CLARK, D.M.O.

The Suptg. Medical Officer,
Kingston.

25. The following new bedsteads have been supplied to Hospitals during the financial year 1914-1915:—

Soldier Bedsteads—

Port Maria	..	..	..	..	10
Sav.-la-Mar	..	..	..	..	6

Spring Bedsteads—

Port Maria	..	..	..	..	7
Spanish Town	..	..	..	..	4
Annotto Bay	..	..	..	..	1
Chapelton	..	..	..	..	3
St. Ann's Bay	..	..	..	..	3

VOMITING SICKNESS (So-called).

26 Owing to a severe outbreak of Vomiting Sickness which took place in St. James parish close to Montego Bay, Dr. H. H. Scott, (Pathologist) was sent down to investigate the matter with Dr. G. Thompson, D.M.O., of the district.

His preliminary report, which is a very interesting one, has been forwarded to His Excellency, but as further investigation on animals is required its publication awaits further consideration.

The so-called Vomiting Sickness also occurred in other parishes. See return attached.

* It should be noted that the year was a very dry one.—Ed.

LEPROSY.

27. The following cases are known to exist in the various districts:—

Cave Valley.—22 cases are known to exist. 10 males and 12 females. 15 cases are of the tubercular and 7 are anæsthetic variety.

Christiana.—One male and one female known of—isolated. Tubercular type.

Chapelton.—Six known of and were sent to Leper Asylum. Four males and 2 females.

Duncans.—Two male lepers known of, one of 13 and one of 15 years of age. They have been properly isolated. Both tubercular.

Lower St. Andrew.—Two lepers known of—both anæsthetic cases.

Little London.—One female known of—not isolated and who has refused to go to the Leper Asylum. She had been there before.

Linstead.—One leper, male, tubercular—isolation not complete.

Montego Bay.—3 cases known of. Two females and one male. One female has been sent to the Leper Asylum. Properly isolated, they have ulcers on their feet.

Newport.—One case was sent to the Leper Asylum.

Old Harbour.—One female sent to the Leper Asylum.

Sav.-la-Mar.—One known of, an indentured coolie on an estate—not isolated.

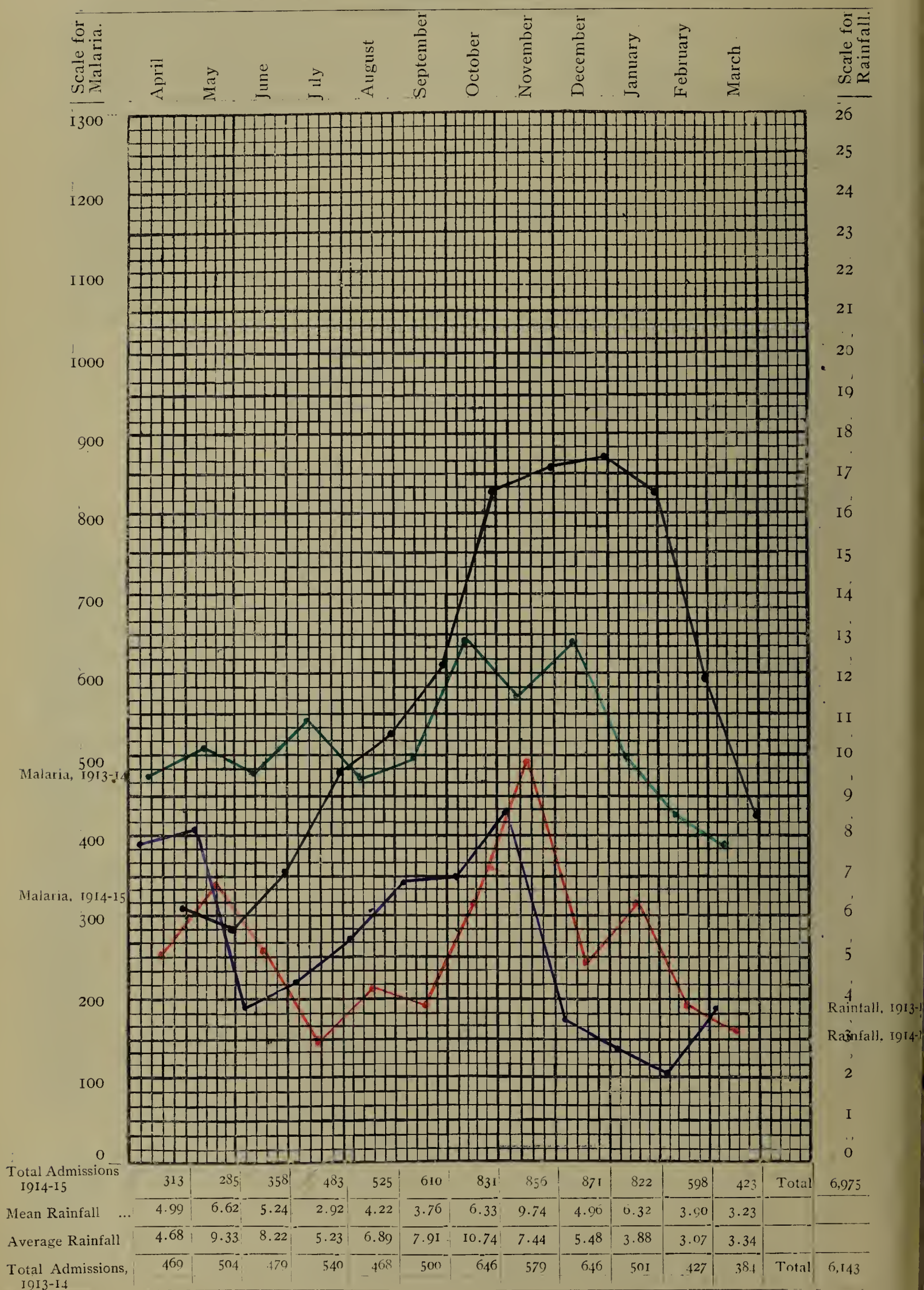
Ulster Spring.—One male leper known of.

In the other districts none are known of for certain by the District Medical Officers.

28.	District.	So-called Vomiting Sickness.						Pellagra.						Leprosy.					
		Cases seen.			Deaths.			Cases seen.			Deaths.			Cases seen.			Deaths.		
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Kingston	2	9	11	1	1	2	..	1	1	..	..	..
Lower St. Andrew	..	2	3	5	2	3	5	2	11	13	..	8	8	..	1	1	..	..	..
Stony Hill	..	2	..	2	1	1	2	..	2	2	..	..	..	..	..	..	..	..	..
Gordon Town	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Morant Bay	1	..	1	..	..	..	..	..	..	..	..	..
St. Davids
Plantain Garden River
Manchioneal	..	1	..	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Port Antonio	2	..	2	..	..	..	1	..	1	..	..	..
Buff Bay
Annotto Bay	2	2	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..
Richmond	..	1	10	11	1	8	9	..	..	..	..	..	..	..	..	..	..	..	..
Port Maria	..	3	8	11	3	7	10	1	2	3	..	1	1	..	..	..	..	..	..
Gayle	1	1	..	..	..	..	..	..	..	..	..	..	..	..
St. Ann's Bay	..	7	4	11	6	4	10	..	1	1	..	..	..	..	..	..	..	..	..
Claremont	..	2	1	3	2	1	3	..	..	..	..	..	..	..	..	..	..	..	..
Cave Valley	..	1	6	7	1	3	4	..	..	..	..	..	..	2	..	2	..	..	..
Ulster Spring	..	1	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..
Duncans	..	18	16	34	10	7	17	..	..	..	..	..	..	14	..	14	1	..	1
Falmouth	..	4	17	21	..	11	11	..	..	..	..	..	..	..	..	..	..	..	..
Montego Bay	..	19	42	61	13	30	43	1	2	3	1	..	1	1	2	3	..	..	..
Adelphi	..	1	5	6	1	4	5	..	..	..	..	..	..	..	..	..	..	..	..
Lucea
Little London
Sav.-la-Mar	1	3	4	..	..	..	1	..	1	..	..	..
Grange Hill	1	1	..	1	1	1	..	1	1	..	1	..	..	..	..	..	..
Lambs River
Black River
Santa Cruz	2	3	5	..	..	..	..	..	..	..	..	..
Balaclava	..	7	3	10	7	3	10	..	..	..	..	..	..	..	..	..	..	..	..
Mandeville
Newport	1	..	1	..	..	..
Christiana	1	1	2	..	..	..
Chapelton	2	2	..	..	..	..	..	..	..	..	..	4	2	6	..	..	..
May Pen	1	1	2	..	1	1	..	1	1	..	..	..	..	..	..
Vere	..	1	1	2	1	1	2	2	2	4	2	1	3	..	..	..	..	..	..
Crofts Hill	2	2	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..
Spanish Town
Linstead	3	3	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..
Old Harbour	1	1	..	..	..	..
Port Royal
<i>Temporary Outstations—</i>																			
Brown's Town
Hope Bay
Southfield	6	12	18	..	..	..	..	..	..	..	..	..
		71	126	197	50	91	141	21	48	69	5	12	17	25	9	34	1	..	1



Chart showing the monthly number of admissions to the Public Hospitals in Jamaica for Malaria as well as the monthly Rainfall during the Financial year, 1914-1915.



29. RETURN OF DEATHS.

The following return of deaths has been kindly given me by the Registrar General. Once more one has to call attention to the very large number of deaths recorded concerning which no medical certificate was presented. Such deaths may have been due to anything at all.

Parish.	Total deaths.	No. of non-medically certified deaths.	Deaths under one year.	Deaths under 5 years.	Deaths registered from	
					So-called Vomiting Sickness.	Enteric Fever.
Kingston	1,616	228	528	666		67
St. Andrew	1,427	798	367	557	11	13
St. Thomas	1,012	727	252	428	1	11
Portland	1,241	847	419	607	1	12
St. Mary	1,770	1,285	603	839	19	11
St. Ann	1,379	1,158	410	625	14	14
Trelawny	852	725	271	410	32	1
St. James	953	731	252	405	42	16
Hanover	877	726	274	403		7
Westmoreland	1,416	1,104	388	652	2	17
St. Elizabeth	1,457	1,301	496	693	21	6
Manchester	1,113	971	331	491	10	9
Clarendon	1,560	1,346	456	737	41	11
St. Catherine	2,129	1,626	675	989	2	11
Whole Island	18,802	13,573	5,722	8,502	196	206

30. Admissions to the various Hospitals month by month for Malaria:—

Hospitals.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
Morant Bay	6	6	12	13	14	15	10	11	13	23	26	21	170
Hordley	18	19	22	33	34	36	27	36	55	94	70	59	503
Port Antonio	53	34	47	65	130	194	298	272	226	175	116	100	1,710
Buff Bay	31	23	36	46	92	101	124	96	94	85	43	25	796
Annotto Bay	67	76	69	82	66	76	155	185	210	159	94	59	1,298
Port Maria	23	13	21	14	14	22	54	40	53	33	46	30	363
St. Ann's Bay	4	3		3	5		2	4	18	26	16	11	92
Cave Valley			1						1				2
Falmouth	2	2	1	2				1	1	3	3	3	18
Ulster Spring													
Montego Bay	9	4	1	4	6	7	7	24	12	15	21	11	121
Lucea	7	2	2	2	1	4	4	5	12	21	11	5	76
Sav.-la-Mar	45	54	99	158	126	116	102	104	110	87	77	43	1,121
Black River	2	3	1	4			1	11	10	7	11	3	53
Mandeville			1	1		1	2			1			6
Chapelton	3	2	1	9	1	1	3	1		1	3	4	29
Lionel Town	19	14	8	11	7	9	8	18	19	39	25	19	196
Spanish Town	18	25	24	25	17	7	11	27	28	42	28	23	275
Linstead	1	3	2	3	1	4	6	6	1	5	1	2	35
Kingston	5	2	10	8	11	17	17	15	8	6	7	5	111
	313	285	358	483	525	610	831	856	871	822	598	423	6,975

WATER SUPPLIES. (SANITATION.)

31. One has to record with pleasure the fact that at last a good and ample water supply by pipe has been installed at Chapelton.

During the droughts of recent years Chapelton Hospital has frequently had to buy water—a fact that means that any chance of proper lavatory accommodation was quite out of the question.

Lionel Town Hospital now has a regular supply of water by pipe, a well having been bored from which water is pumped up by Airmotor into a tank from which it is led all over the hospital by pipes.

Some improvement has been made in the Lucea water supply by the building a new reservoir.

Tanks have been erected in St. Ann, Manchester and St. Elizabeth parishes, all of which have for some years been very drought stricken.

Unfortunately one cannot as yet record the installation of a public water supply for Stony Hill, a supply that is very urgently needed inasmuch as water has on several extended periods had to be carried up from the river a distance of one mile or more, even for the use of the Reformatory.

When one considers that several hundreds of boys and girls in the Stony Hill Industrial School and the people of the village of Stony Hill are liable to be suddenly forced to depend upon a water supply which may be and has been found insufficient on several occasions so that water has had to be, as before stated, carried a mile or more, the matter assumes a dangerous aspect.

SYNOPSIS OF D. M. O's. REPORTS.

WATER SUPPLIES.

BUFF BAY.

Buff Bay depends almost entirely on wells for its water supply, which water is very much polluted as one finds a well, pit closet or horse stable within a few feet of one another, in fact in some yards they seem to jostle each other for standing room. Water supply much polluted.

BROWN'S TOWN.

During the year there was a severe drought from June to August. Little or no water could be had within 7 or 8 miles of Brown's Town. The drought was particularly felt from the seacoast to about 12 miles inland.

Since that time a large cement tank has been built by the Parochial Board of St. Ann, at Lawrence Park with money specially granted by the Government and it is now full of water.

The usual source of water is by tanks, and rivers near the seacoast and by springs. The purity is good. There is little or no pollution of water supply.

BLACK RIVER.

Water supply of the town of Black River very good.

CLAREMONT.

Water is obtained almost entirely from tanks and ponds except in the vicinity of Riverhead (Rio Ho) and Pedro rivers. They are probably all contaminated except the tanks. The tank water is in most instances in my opinion pure but the ponds from which the majority of peasants drink are almost certainly contaminated.

CAVE VALLEY.

The water supply in the northern part of the district is derived from tanks and ponds; in the vicinity of Cave Valley river and spring water is used.

When the new public tanks are completed Brown's Town will have a good supply of pure water, other districts are also served by large public tanks, and in dry weather when the home supply fails, good water can be obtained at the small cost of $\frac{1}{4}$ d for 4 gallons, very poor people pay nothing. The old excuse for using polluted water no longer exists.

CHRISTIANA.

The water is supplied from tanks and springs of good quality, as far as is known there is no pollution.

CHAPELTON.

Except in Chapelton village the D. M. O. regrets not to be able to report any improvement in the water supplies. Water for domestic purposes in the Chapelton district is obtained from springs and rivers and used without being boiled or filtered. In Chapelton village a public water supply has been provided and water in ample quantity and of good quality is easily available to residents. Every water supply of the district except that of Chapelton village must be considered liable to pollution.

CROFTS HILL.

The villages of this district are supplied with water from rivers and springs. In some cases where springs exist the water is obtained right from the source and so the supply has little chance of pollution, in others, however, the water is obtained from the springs and rivers along their courses so that the purity of the water is very questionable.

DUNCANS.

Water supplies of towns and villages in the district except one is from ponds in the neighbourhood of the towns. The exception is Stewart Town which gets its water supply principally from the Rio Bueno River—except on the south side of the town where the supply comes from ponds.

Pollution of water supplies is general throughout the district and cannot be prevented,

FALMOUTH.

The town of Falmouth has a regular and good water supply from the Martha Brae River. The villages obtain their water supply from ponds and springs.
No pollution of water has occurred during the year.

GORDON TOWN.

The chief villages, namely Gordon Town and Mavis Bank receive their water supply from rivers. These rivers are protected by Law from being polluted.

GAYLE.

The chief sources of the water supplies are from springs which abound plentifully in this district. No new works for the protection from pollution of springs have been undertaken by the Parochial Board in the year under review and it is a matter for regret that Parochial funds have not been sufficient to enable the Board to undertake the work for the protection of the White Spring at Windsor Castle. It is however, gratifying to note that despite the severe drought which prevailed during the greater part of the last year no "water borne" epidemics of disease occurred.

GRANGE HILL.

Water in most instances is got from wells which are free from pollution. Many use water from Blue holes; these originate in subterranean springs and drain eventually into the Cabaritta river and contain good water. In some instances the rain water is used, this of course being very liable to pollution.

HAGLEY GAP.

Water supply from mountains, streams, rivers and springs. The purity is not above suspicion, and only in rare cases is the water boiled for drinking.

HORDLEY.

Water supply good and fairly pure.

LOWER ST. ANDREW.

The chief supply from the Kingston and St. Andrew supply, which is very good. The D. M. O. has no knowledge of any instance of pollution of water supply.

LUCEA.

The water supply of the town is greatly improved by the addition of the water works of a large new reservoir. The supply outside the town is chiefly by springs—in some localities it is protected. Outside the town supply and where the supply is by springs, pollution is bound to occur.

LITTLE LONDON.

Water supply is from springs, wells and ponds. Some improvement has been effected here in some places where the police have ordered that no one is to wash clothes in certain streams. On the whole the D. M. O. thinks there is not much pollution of a dangerous sort.

LAMB'S RIVER.

Those who can afford it have tanks and boil their water before drinking. The peasantry do not boil their water and they obtain it from the numerous ponds which are to be found on the various pens. There is a public drinking supply at York which is protected.

The water taken from ponds on the various pens is liable to contamination.

LIONEL TOWN.

Surface wells are the chief sources of supply except in those districts adjoining the two rivers which pass through the district. No outbreak of water borne diseases occurred. The surface wells in the district are probably all polluted to some extent. A sample from the well at Hayes was on bacteriological examination found to be of very doubtful purity. The report was forwarded to the Parochial Board which is no doubt giving the question some attention.

LINSTED.

The water supply of Linstead village is good when there are no flood rains. In heavy seasons only liquid mud is distributed in the pipes. With regard to the other towns and villages much pollution of the water supply is possible and exists.

MORANT BAY.

Morant Bay the chief town is supplied by the Morant Bay Water Works. The quality of the water is good and the quantity available is ample, but the provision made for the supply of the town is inadequate. The villages of Seaforth, Trinity Ville and Port Morant have each river water within easy reach, always of doubtful purity on account of the liability of Typhoid contamination and dysenteric outbreaks. The people are advised to boil all water used for drinking purposes. The D. M. O. is not aware of any specific pollution of water supply.

MANCHIONEAL.

The water supply generally is from surface springs, which are protected by Law. In the dry months there is a considerable amount of inconvenience in obtaining water, which has to be carried in buckets from the Muirtun River $1\frac{1}{4}$ miles from the town. For some long time the Parochial Board has been considering a scheme for providing a supply to the town, such scheme if carried out would satisfy a long felt want in the town.

Although the purity of these supplies might be questionable no instance of pollution has come under notice.

MORTEGO BAY.

The water supply still needs improvement both as regards purity and service. During the drought the quantity of water was very limited and in rainy weather a large quantity of water goes to waste. The supply for the hill residences is very poor, and it is very seldom that the supply tank at the hospital can be filled, the pressure being so low that the water cannot rise the 25 to 30 feet necessary to reach the tank.

The water supply of all the villages and country districts is not fit for drinking unless boiled.

Examination of all the water supplies shows that a certain amount of pollution takes place. All the sources of supply are under the control of the Parochial Board, who employ caretakers; but efficient supervision appears to be largely a question of means and the D.M.O. understands that the Parochial Fathers have not the means at their disposal to provide an absolutely pure supply in every district.

MANDEVILLE.

There is no change in the water supply from last year except that the small reservoir at Porus has been infected with a parasite of the strongulus type which has rendered the water practically unfit for use. The water supply of Porus is therefore as bad as ever. The Mandeville supply is abundant and pure.

NEWPORT.

There are many good tanks both public and private, but in some outlying sections mere holes are dug in the earth, without being curbed in any way, with the result that surface drainage may contaminate the water.

OLD HARBOUR.

Owing to fairly regular and heavy rains in the mountains the scarcity of water has not been so greatly felt as in previous years and the water famine was only acute for about 6 or 7 weeks. Nothing has been done to increase or improve the supply. The water supply is derived through iron pipes and is thus free from any chance of pollution during transit.

PORT MARIA.

Port Maria is still supplied by pipes from a reservoir at Crescent yielding over 20,000 gallons daily. The water is good and the supply abundant. The proposal to extend the supply to Galena and Oracabessa has not yet materialised. In the meantime Galena is supplied by shallow wells near the sea, the water from which is brackish and has been proved by a recent bacteriological examination to be very impure. One of these wells has been recently taken over by the Local Board of Health, and steps are being taken to protect it and prevent pollution. Oracabessa and some of the smaller settlements are still supplied by protected springs.

PORT ROYAL.

The water supply continued good during the year. During the course of the year the Government Bacteriologist reported that the water was of excellent quality. The water supply is under the charge of the Military. There is no source of pollution along the pipes, but damage is sometimes done by the action of the sea during heavy or violent weather.

RICHMOND.

The chief towns of the district, Richmond and Highgate, depend on springs, tank and wells for their water supplies. The water must necessarily be polluted, especially during the dry seasons when the springs become almost stagnant pools.

STONY HILL.

The water supply generally is from surface springs, usually fairly pure. Surface wells with water of doubtful purity exists. The supply of Stony Hill proper is bad, the gathering ground of the spring is land behind shops, fouled with latrines, roadwashings, etc. The really dangerous case of constant pollution of springs lies at Stony Hill itself, generally speaking the springs keep themselves clean.

ST. ANN'S BAY.

The water supplies of most of the towns and villages in the district are from rivers which are in the most part as nearly pure as is possible. The D.M.O. is not aware of any marked pollution of water.

SAV.-LA-MAR.

The water supply remains exactly the same as last year.

SPANISH TOWN.

The water supply is from the Rio Cobre and the villages, from tanks and ponds.

ULSTER SPRING.

Reports have from time to time been made about the pollution of water supplies in certain sections and in this connection improvements have been made in order to protect the "Big Spring." This spring is the chief water supply of the lower section of the Ulster Spring village.

GENERAL SANITATION.

32. One may say that General Sanitation has improved since Law 35 of 1910 was passed by Council and more interest has been taken by the Local Boards, but in many cases the recommendations of the

Health Officers have not been carried out, and the system of latrines where latrines exist at all, often leave much to be desired, consequently no progress can be made in the matter of Hookworm infection until the Local Boards of Health can be persuaded or compelled to carry out their Laws and Bye-Laws in so far as the presence and use of latrines are concerned.

BUFF BAY.

Waste Matter is removed by carts to a dumping ground.

Latrines—Pit closets where any system exists at all.

Overcrowding—There is very little overcrowding and what there is only exists because of the peasants morbid desire to sleep huddled up together. The D.M.O. is afraid there is no remedy for this as the peasantry are mortally afraid to sleep by themselves.

Yards and Compounds—It is the duty of the Medical Officer of Health and Sanitary Inspector to see that the yards and compounds are kept in a sanitary condition.

Mosquito breeding.—No measures have been taken this year to remove breeding places of mosquitoes.

Sanitary improvements—None known of.

BROWN'S TOWN.

Waste matter—Is disposed of by carts, the refuse being either burned or used as manure on cultivated lands.

Latrines—Surface closets; but dry earth is being gradually used over the excreta which is buried periodically.

Drainage—Surface.

Overcrowding—Hardly any.

Yards and Compounds—Fairly well kept. Much effort is made by sanitary officers to bring about improvement in this respect.

Mosquito breeding—Except in the low lying lands on some parts of the seacoast there is not much inducement for the breeding of mosquitoes.

BLACK RIVER.

Drainage—Concrete drains on main street only. No other laid out drainage.

Latrines—Pit and bucket system.

Overcrowding—Much in the houses of lower classes.

BALACLAVA.

Sanitary improvements—Remain the same as last year.

CAVE VALLEY.

Sanitary improvements—D.M.O. is not aware of any particular improvements made during the year.

Compounds and yards—Kept in fair condition.

Latrines with shallow pits open at the back are in common use. The pits or holes are occasionally cleaned out and excreta buried in the same yard.

Waste matter—In the country districts and smaller villages waste matter is sometimes burnt, but usually thrown around the coffee and bananas near the dwellings.

Drainage—Natural.

CLAREMONT.

Drainage—Naturally good sanitary conditions exist in the villages of the district, all being well drained, due to the conformation of surface, except Moneague, which has a few low lying spots that remain damp for two or three days after heavy rains.

Waste matter—Is easily disposed of by burning and by dumping into disused marl pits.

Latrines—Pit closets are rapidly replacing the surface latrines that were universal a year ago.

Overcrowding—Exists chiefly outside of the villages.

Compounds and yards—Are in fair sanitary condition.

Mosquito breeding—Chiefly in tanks and ponds.

Sanitary improvements—Installation of pit latrines and filling up of marshy places in Moneague.

CHRISTIANA.

Latrines—Bucket and dry earth system.

Drainage—Good.

Overcrowding—None.

Compounds and yards—In very fair condition.

Mosquito breeding—Very little.

CHAPELTON.

Waste matter—The same as before.

Latrines—The absence of any latrine accommodation or where any attempt at its provision is made, its unsatisfactory character must still be chronicled.

Drainage—Good.

Overcrowding—Exists.

Compounds and yards—In the chief town premises have been kept fairly free from bush.

Mosquito breeding—Mosquitoes are found in low lying land by river courses and cases of malaria occur in villages in such neighbourhoods, but no practical scheme for dealing with this matter has yet been considered.

Sanitary Improvements—Provision of a Public Water Supply for Chapelton. The screening of meat stalls and their complete renovation at the Chapelton market. The protection of articles of food offered for sale by the provision of properly screened receptacles.

CROFTS HILL.

Waste matter—Is disposed of on the lands adjacent to the yards of the houses.

Latrines—The system is represented by a few earth closets in the villages and the bucket system in one or two residences.

Drainage—Is entirely surface. The hilly nature of the district makes this satisfactory.

Overcrowding—Exists to a large extent among the peasantry.

Compounds and yards—Generally kept clean and tidy.

Mosquito breeding—Does not call for any attention.

DUNCANS.

Waste matter—No provision is made for this.

Latrines—These consist of surface latrines which are now protected at the back against the entry of fowls and pigs.

Drainage—Natural surface drainage, no special provision is made.

Overcrowding—Prevalent to a marked extent in all villages.

Compounds and yards—There has been a marked improvement in nearly all cases in the yards and compounds, people are now keeping their premises clean.

Mosquito breeding—Some improvement has been made, although owing to the great difficulty experienced by the inhabitants of the towns and villages in obtaining water they are compelled to store it in all sorts of vessels and these are often not protected from mosquitoes.

Sanitary improvements—Filling up of water holes, removal of penguin and bush from yards and compounds.

FALMOUTH.

Waste matter—Is used to fill up a pond to the north west of the town of Falmouth.

Latrines—Still not what they should be. Premises situated beside the mangroves have no latrines, in some cases the people are too poor to have privies erected. The pit system obtains generally in other parts of the town, but this is also very unsatisfactory as the nature of the soil is such that a proper depth of pit cannot be obtained. In a few cases the pan closet system is used.

Drainage—Surface drainage is employed, but not with such satisfaction as if all the streets were provided with concrete drains.

Overcrowding—None known of.

Yards and compounds—Are kept fairly clean and free from bush and weed, but there are still too many big trees in the town.

Mosquito breeding—In the crab holes which abound in the town and in certain mangrove around the town. The Parochial Board has tried to fill up the crabholes in certain places.

GORDON TOWN.

Waste matter—Collected, carted away and burnt.

Latrines—Bucket and pit systems are used. Dry earth is thrown down pits and the buckets are emptied daily.

Drainage—Owing to the hilly nature of the district is excellent.

Overcrowding—Exists to a marked degree.

Compounds and yards—Fairly good.

Mosquito breeding—Owing to the excellent natural drainage of the district few places can exist for the breeding of mosquitoes. Old pans, broken bottles, etc., are removed with waste matter.

GAYLE.

Waste matter—The D.M.O. has urged on the Parochial Board in the course of his monthly reports the desirability of establishing a cart service for the proper collection and disposal of waste matter, but he regrets to say that no move has been made in that direction and conditions remain the same.

Latrines—Marked improvement in this direction. Numerous latrines have been erected in the chief villages throughout the district. The pit and dry earth closets are those in use.

Drainage—Natural.

Overcrowding—This unfortunate condition has been aggravated to a great extent by the marked fall in the demand for labour during the year.

Compounds and yards—The improvement is satisfactory and there is evidence that the majority of the people have been convinced of the health advantages to be secured by the better observance of sanitary measures.

Mosquito breeding—There are no special breeding places for mosquitoes.

Sanitary improvements—No new works. An Inspector of Nuisances has been appointed for the Windsor Castle district and under his supervision there has been marked improvement in the sanitary conditions in this village.

GRANGE HILL.

Waste matter—Thrown away, collected into heaps and burnt or used as manure.

Drainage—Surface. In a few instances drains are dug.

Overcrowding—Not generally marked.

Compounds and yards—Satisfactory.

Latrines—Those that exist and only in the better class houses are of the surface type.

Mosquito breeding—This has been greatly lessened owing to a piece of land some six acres which was formerly in grass and bush and penguin, having been cleaned, drained and planted in cane.

Sanitary improvements—None visible.

HAGLEY GAP.

Waste matter—There is no special method adopted. In most cases the bush is resorted to.

Latrines—Of the earth system.

Drainage—Natural.
Overcrowding—Is general.
Compounds and yards—Very well kept.
Mosquito breeding—None brought to attention.

HORDLEY.

Latrines—Practically absent.
Overcrowding—Very little change.
Compounds and yards—Some improvement.
Mosquito breeding—Still abounds and practically no measures taken to prevent them breeding.

LOWER ST. ANDREW.

Waste matter—The disposal is very good in the houses of better classes, very bad in the houses of the poorest people.

Latrines—The absorption pit system seems to be the best and works satisfactorily.

Overcrowding—Unknown in the houses of the better classes. Is general in the houses of the poorer classes.

Compounds and yards—Kept very good in some instances, very bad in others.

Mosquito breeding—Takes place where there is stagnant water, e.g., the pond on the Molynes Road, measures have been taken by the sanitary authorities to drain certain portions of the district with good results.

Sanitary improvements—Some have been made in the matter of drainage, sweeping of streets, removal of rubbish and in establishing latrine system or compelling same to be established. It should be stated that all sorts of latrines are found in the district.

LUCEA.

Waste matter—Is disposed of into the sea and in filling swampy ground near the town.

Latrines—Bucket system. Very many yards are without latrines. This defect has been brought to the notice of the Local Board of Health, who, so far, have done nothing to remedy the evil.

Drainage—Surface.

Overcrowding—Throughout the whole parish.

Compounds and yards—In good order.

LITTLE LONDON.

Waste matter—Thrown anywhere and anyhow.

Latrines—Only the better class houses have latrines and they are on the dry earth principle. The vast majority of the people defæcate anywhere, children of nature, as they are, they obey nature's call whenever and wherever the call comes.

Drainage—Natural surface drainage. The better class people do make some attempt at drainage by digging drains about their yards.

Overcrowding—This is the rule, but it must be remembered that the houses are mostly built of wattle and the doors and windows never close tightly. The result is that there is a certain amount of movement in the air as it escapes through some of the openings and comes in at others. The D.M.O. has once or twice been struck on entering a crowded hut at night time, with the absence of that suffocating and depressing sensation which one experiences on entering a room in a properly constructed house; that has been thoroughly closed for a few days, although it has been quite unoccupied.

Compounds and yards—Are usually untidily kept and bush is allowed to grow quite near the houses. The taste for flower gardens is gradually being acquired by the people, and attempts are being made to plant flowering plants around the houses and in some cases quite a respectable little garden is to be seen.

Mosquito breeding—There has been no improvement in this. No means are adopted by the masses to prevent the breeding of mosquitoes nor their getting into the houses.

There is a very excellent health law but there seems to be no means of carrying it out.

Sanitary improvements—Practically none.

LAMB'S RIVER.

Waste matter—Burnt or thrown down in some spot.

Latrines—Earth closets or buckets. In some places the people defæcate on the open ground.

Drainage—Surface.

Overcrowding—Exists in the houses of the poorer classes, and along with this is their objection to ventilation.

Compounds and yards—Very dirty.

LIONEL TOWN.

Waste matter—No provision made except at Alley where arrangements are made for the removal of refuse from the market.

Latrines—At Alley surface latrines have been replaced by buckets and pits.

Drainage—Throughout the district is defective as the land is exceedingly flat, and in some localities, falls are obtained with difficulty.

Drainage in the vicinity of Lionel Town is bad and after heavy rains a considerable area to the north east of the village remains under water for some weeks.

Overcrowding—Exists to a great extent among the peasantry, and when their means are taken into consideration it is difficult to see how the evil can be avoided.

Mosquito breeding—The low rainfall has been responsible for a notable decrease in the numbers of mosquitoes. Potential breeding places exist all over the district and the Milk River and Rio Minho were little more than stagnant pools for the greater part of the year.

Compounds & Yards—Kept fairly clean and tidy.

Sanitary improvements—The market place at the Alley was screened and painted.

LINSTEAD.

Waste matter—There is no systematic disposal of waste matter from house to house.

Latrines—Surface latrines are still in use in many yards with its attendant evils.

Drainage—Faulty, and more concrete drains are needed.

Compounds and yards—Show neglect in bushing and cleaning.

Mosquito breeding—Breed freely in choked drains and water settlements everywhere as much waste of water goes on.

There is, unfortunately, no special Health Officer for Linstead.—(Ed.)

MORANT BAY.

Waste matter—Is removed by a Parochial cart system.

Latrines—Pit latrines are in general use.

Drainage—Concrete open gutters by the side of the streets for a considerable portion of their extent, the use of such gutters might well be extended.

Compounds and yards—A certain amount of attention is now paid to the clearing up of yards and compounds.

Mosquito breeding—No systematic attempts made to deal with it.

MANCHIONEAL.

Waste matter—Refuse is thrown on the land.

Latrines—Not much used. Where there are any they are earth closets.

Drainage—Natural surface drainage, the district being hilly.

Overcrowding—Does exist in the houses of the poorer classes.

Compounds and yards—Well kept.

Mosquito breeding—No definite breeding places. Where barrels are used for storing water, the Sanitary Inspector insists that kerosene-oil be thrown in.

Sanitary improvements—None.

MORTEGO BAY.

Waste matter—Is carted to a dumping ground on a portion of Catherine Hall Estate and there burnt the ashes being used by the estate as manure.

Latrines—Pit system. It has been greatly improved during the year most of them being made fly proof and the vaults being ventilated with pipes.

Drainage—Good.

Overcrowding—Much less than last year.

Compounds and yards—Fair condition.

Mosquito breeding—Only occurs during the wet season. All breeding places are destroyed as soon as found out.

MANDEVILLE.

Waste matter—The disposal of waste matter is in the hands of the M.O.H., and a new system of drainage for the removal of night soil is being installed.

Overcrowding—There is always overcrowding.

Compounds and yards—Marked improvement owing to frequent visits by the M.O.H. and Inspector of Nuisances.

NEWPORT.

Latrines—Very few are to be found in the outlying sections of the district.

Mosquito breeding—Practically none, except water tanks and water holes, there being few swamps if any.

OLD HARBOUR.

Waste matter—Is collected daily in carts and used for filling up insanitary hollows.

Latrines—The system is a mixed one the closets are regularly inspected and cleansed, and their contents buried.

Overcrowding—Exists undoubtedly though many new houses are being erected in the district. The type of new buildings is in almost every case superior to that of the old ones, they are replacing, wood with zinc roofs taking the place of wattle and thatch in many instances.

Mosquito breeding—No regular mosquito breeding places within the boundaries. A stock of crude petroleum is kept and used as required after heavy rains.

Sanitary improvements—A cement rain water guttering on the Spanish Town Road has been continued on the side opposite the Ludford School from the School gate to Kate's Gully.

PORT ANTONIO.

Mosquito breeding—The D.M.O. is not aware that any special measures have been taken to remove breeding places with the exception that some of the morass land belonging to the Titchfield Trust near the site recently filled on which the hospital was to be placed have been improved, roads have been made through them and portions have been filled in. He regrets to note that the United Fruit Company appears to have suspended operations in connection with the filling in of the Bound Brook swamp.

PORT MARIA.

Waste matter—There is a daily collection of house refuse and street sweepings by the Sanitary carts which is very efficiently done. Scavenging arrangements at Oracabessa and Hampstead are also good.

Latrines—The Local Board has at last made a move in the right direction and adopted the bucket system for the town of Port Maria. A deposit ground was acquired, a special sanitary rate was fixed for the town, householders were called upon to erect latrines according to the Bye-laws, and on October 1st, 1914, the new system was inaugurated and has been working smoothly since.

Everything in connection with this system, cleaning, removal, etc., is under the direct control of the Sanitary Department. All the latrines attached to the various Government Departments have since been taken over by the Local Board. This is certainly a great improvement and results are already being seen in the almost complete absence of Enteric Fever and other bowel troubles. At Oracabessa, Hampstead and other settlements, open pit closets are the only latrines in use, in some places there are practically none.

Drainage—Surface drainage is bad in Port Maria owing to the low level of the town, and will always remain so until the large drains are laid down through the filled up area with small drains to connect with these.

Overcrowding—Still exists especially in the yards and rooms and in the creole barracks on many of the estates.

Compounds and yards—Improved considerably.

Mosquito breeding—These are found chiefly in the low lying lands especially around the town of Port Maria: the filling up of swamp lands and cleaning and bushing of yards are reducing these to a minimum however, and the continued decrease in Malaria is the practical proof of this.

Sanitary improvements—The filling in of Warner's Pond and adjacent lands has been almost completed. Laying of concrete drains protecting wells and other water supplies. But the greatest sanitary work for the year has been the adoption of the new latrine system.

PORT ROYAL.

Waste matter—Is collected and burnt. It used formerly to be dumped in the sea.

Latrines—An important change has taken place with the latrine system. The buckets used formerly to be emptied every 48 hours during the week and at the end of the week 72 hours passed before these were emptied. Now the buckets are emptied every night except on Sundays.

Drainage—Surface concrete drains which are maintained in good order.

Overcrowding—Exists in many yards, due to poverty.

Compounds and yards—Kept fairly clean.

Mosquito breeding—The reduction of mosquito breeding has been well maintained.

RICHMOND.

Waste matter—Is carried to the deposit grounds provided for the purpose and also used as manure in the banana fields.

Latrines—Open closets as a rule where any exist, but in some homes the bucket system is in vogue.

Drainage—Natural surface drainage.

Overcrowding—Exists in the houses of the poor.

Compounds and yards—Kept in fair order.

Mosquito breeding—Places exist along the banks of some of the streams, especially those in the Richmond Road, Richmond Grass and Newport districts.

STONY HILL.

Waste matter.—Is usually disposed of by throwing it into the cultivation surrounding the houses.

Latrines.—Mainly the surface privy, where there is any system at all. Pressure is gradually being applied to bring pit closets into use in accordance with the Proclamation of August, 1913.

Drainage.—Usually good, following the lie of the land, the country being hilly. There is a trench at the east side of the road at the top of Stony Hill which needs constant attention. Nothing short of a concrete drain is of any permanent use.

Overcrowding.—Practically all houses are overcrowded, some excessively so.

Compounds and yards.—Often littered with rubbish, excrement, shells, etc.

Mosquitoes breeding.—*Stegomyia* and *Culex* are common in the district. *Anopheles* breed in the low lying lands of Temple Hall, Brandon Hill and Tom's River.

Sanitary improvements.—An endeavour to improve the number of pit closets.

ST. ANN'S BAY.

Waste matter.—Garden and street refuse are dumped in the Parochial Deposit ground.

Latrines.—Pit closets and buckets in private residences.

Drainage.—Concrete drains along the sides of roads—the natural situation of the town making this very effective.

Overcrowding.—Exists at about the average extent for Jamaica.

Compounds and yards.—In fair condition.

Mosquito breeding.—Occurs in the low lying lands of St. Ann's Bay, chiefly to the west in the rainy seasons. At Salem in the swampy lands and at Ocho Rios.

Sanitary improvements.—Not aware of any, other than the cutting down of trees in some cases harmless.

SAV.-LA-MAR.

Latrines.—The system remains the same as last year.

Drainage.—No change since last report.

SPANISH TOWN.

Latrines.—Generally pit closets, but in the public institutions dry earth system is adopted.

Drainage.—Surface. Concrete gutters except in places where foul matter is allowed to accumulate and soak down.

Overcrowding.—This is a matter which requires the constant attention of the Inspector of Nuisances, but his time appears to be so occupied that he cannot give sufficient attention to this important part of his duties.

Compounds and yards.—Need careful attention. Many dirty yards are to be found in parts of the town.

Mosquito breeding.—More attention needed and measures taken to remove the breeding places of mosquitoes.

Sanitary improvements.—A Slaughter House was erected near the Lepers Home and it is to be hoped that it will be properly screened to prevent the fly nuisance.

The D. M. O. has had to bring to the notice of the Inspector of Nuisances the keeping of pigs in the town. In one instance one was kept at the Prison quarters where slush and filth was found adjacent to the hospital.

The streets are swept on days appointed. The drains are cleaned and all waste matter is allowed to remain until removed by carts.

ULSTER SPRING.

Sanitary conditions.—In the chief village are fair and improving.

33. INFECTIVE DISEASES.

Adelphi.—The most severe outbreak of Malaria both in number of cases and severity of type since the D. M. O. has been in this district occurred in January, and many cases of Vomiting Sickness in February and March.

In the D. M. O.'s opinion this spreading out of the rains into months of occasional showers that don't supply enough storm water to clear out stagnant pools and wash away larvæ and organic matter from river beds and gullies is chiefly responsible for the outbreak of malaria in January.

High winds and cold damp nights preceded the outbreak of Vomiting Sickness in February.

No outbreak of Dysentery occurred but this disease appears to have the alternate-years incidence noted in some other countries.

Buff Bay.—10 cases of Typhoid Fever, 6 cases of Paratyphoid, 1 case Blackwater Fever, 796 cases of Malarial Fever, 28 cases of Pulmonary Tuberculosis, Syphilis, 60 cases. Only 10 cases of Dysentery were noted, all of which were bacillary.

Brown's Town.—Some so-called Vomiting Sickness.

Balaclava.—There has been no outbreak of infective diseases. One case of Scarlet Fever noted.

Cave Valley.—Pulmonary Tuberculosis is on the increase. The D. M. O. has reported 23 fresh cases.

Christiana.—No outbreak of any infective disease.

Chapelton.—No outbreak of disease during the year.

Crofts Hill.—2 cases of Vomiting Sickness (so-called) appeared in February and March.

Duncans.—There was an outbreak of Enterocolitis in the months of November, December and January. This may be described as a recrudescence of the larger outbreak which occurred at the end of 1913 and beginning of 1914. There were about 40 cases with 15 deaths. The epidemic was confined almost entirely to Duncans and neighbouring localities which were practically exempt from the 1913-14 epidemic. The usual epidemic of so-called Vomiting sickness broke out again this year. Two cases occurred, both died. It is impossible to record the number of cases as most or nearly all get the usual stock medicines from the police stations and are not seen by the D. M. O.

The disease prevailed in Duncans, Green Hill and Calabar neighbourhood.

Falmouth.—There were several cases of Chicken Pox. The usual amount of malarial fever, 2 cases of Typhoid.

Gordon Town.—Malarial Fever was prevalent of a mild type. Little Whooping Cough was present. Five cases of Typhoid Fever, 2 deaths, in Gordon Town.

Gayle.—Catarrhal Ophthalmia appeared in the Woodside district in October to December. Three cases of Cerebro Spinal Meningitis. Enteric Fever—3 cases were notified, all mild. Chicken Pox and Mumps were also present. Some malaria fever always at the end of the year.

Grange Hill.—Malarial Bronchial and Nasal Catarrh accounted for most of the cases—the respiratory effectuations were caused by the excessive amount of dust on the roads during the January to March quarter in the intense drought which prevailed.

Hordley.—Towards the end of the year there was a noticeable increase in the number of cases of Malaria. No outbreak of infective disease. Towards the end of the year some cases of pneumonia, fortunately in most cases it was the mild type. The usual number of Gonorrhoea was seen. Syphilis is still prevalent but cases are very seldom seen in the primary stage.

Lucea.—Persistent rains in January and part of February without the usual high seabreezes has undoubtedly caused the large increase in malaria Fever. There were 15 cases of enteric fever, 6 of these were from the Cascade district. Malaria fever accounted for 77 admissions.

Lamb's River.—No outbreak of infective disease. 6 cases of enteric fever occurred during the year.

Lionel Town.—Malaria fever continues to decrease. The admissions to hospital from this cause for the year show a marked decrease which is due mainly to the prolonged drought from which the district has suffered. Fifteen cases of Enteric Fever were seen and treated in hospital. Carriers and unrecognised cases appear to be responsible for the continued evidence of the disease in the district. Three cases of Pellagra were seen. Two died and the third was sent to the Almshouse.

Linstead.—No outbreak of infective disease except Mumps, which continued to the end of the year.

Morant Bay.—The year under review has been a very dry one and consequently the medical history sheet of the district somewhat uneventful. Towards the close of the year a number of deaths occurred among the children of the poorer classes about Trinity Ville and White Horses, generally within a few

hours after the onset of convulsions accompanied or preceded by vomiting. In nearly all the cases examined a striking feature was the large number of worms (ascaris) found in the intestines.

Manchioneal.—During the rainy months—December to February, there was a prevalence of Malaria. The D. M. O. knows of 5 cases of Enteric Fever, 2 deaths. Three of these were spread by contact one to another.

Montego Bay.—56 cases of Typhoid Fever were reported during the year with 13 deaths. 37 of these cases were treated in hospital. This large mortality is due to the fact that the majority of the patients were not brought to the hospital until far advanced in the disease and were in so weakened a condition that they could not rally and treatment prevailed nothing.

Vomiting Sickness appeared in the district during the latter half of February and the first half of March, 1915. There were 61 cases reported with 43 deaths. The majority of the cases were in children below the age of 14 years. Dr. Scott kindly came down and investigated some of the cases, but the result is not yet learnt. The D. M. O. thinks from his own personal observations on these 61 cases that a virulent toxin which seems to develop in decomposed ackees is answerable for the majority if not all of the cases. Malaria Fever was specially severe after the October rains. There was one case of Blackwater Fever in February. The first case for many years.

31 cases of Pulmonary Tuberculosis were recorded, with 13 deaths.

Venereal diseases appear to be more prevalent than ever.

Mandeville.—With the exception of the usual recrudescence of Enteric Fever in the summer-autumn months there has been no prevalence of sickness during the year. The cases of Enteric Fever have been of a milder type. Number treated in hospital 28 with 5 deaths.

Old Harbour.—Malaria has not been prevalent during the year owing to the drought. Two cases of Typhoid Fever occurred. Three cases of Cerebro Spinal Meningitis were notified in April with two deaths. Four cases of Pulmonary Tuberculosis have been met with. Epidemic Influenza was prevalent from May to August, 1914, owing to cold winds during that period. It again appeared from December 1914, to March, 1915, 83 cases being treated in all.

Port Antonio.—The year appears to have been rather an unhealthy one. Last year was a very healthy one as regards Malaria, but the D.M.O. thought it was not desirable to take the improvement too optimistically, the hospital returns for the past year now bear out his opinion; 1,710 cases of malarial fever were admitted as against 892 treated in the hospital during the year 1912-13. A more malignant type was prevalent than during any previous year. Five deaths from this cause occurred in the hospital. Several of the patients were admitted in a comatose condition and on making a blood examination they were found to be suffering from a mixed malaria infection, the Aestivo-autumnal parasite predominating, some of the individual blood corpuscles containing three or four parasites.

26 cases of Enteric Fever reported, 22 of these cases were treated in Hospital.

Cases of Dysentery are still frequently seen, of the Amoebic type. 77 cases were recorded at the hospital.

Two cases of Pellagra have been noted this year.

The D.M.O. had occasion to look over the notification certificate sent him by the Local Board of Health and found that eleven cases of Anterior Poliomyelitis had been notified, ten of the cases having occurred in the practice of one practitioner. The D.M.O. thinks it would be interesting to learn some particulars relating to the cases, the death rates and the results relating to the amount of paralysis that followed. The same medical gentleman appears to have had an epidemic of Septicæmia in his practice, seven cases were notified.

26 cases of Pneumonia were notified, 19 of the cases were notified from the hospital.

41 cases of Pulmonary Tuberculosis were reported for the year.

Syphilis is still frequently seen, 46 cases in its primary stage were admitted to the hospital.

Port Maria.—Dysentery was prevalent during the months of November, December and January. It was of a mild bacillary type and the number of deaths small. It occurred chiefly among the settlements outside the town of Port Maria, but very few cases were seen in the town itself. It followed chiefly the courses of the Outram and Pagee Rivers, and was most probably waterborne. The D.M.O. thinks there were about 80 cases. The hospital admission were as follows: Amoebic 5, bacillary 20. There were eleven cases of so-called Vomiting Sickness with 10 deaths. Enteric Fever was conspicuous by its absence this year, 13 cases being notified, four of which came from outside districts, 2 were imported. Practically 7 cases as against 51 last year. One case of Diphtheria was notified, this was bacteriologically confirmed.

Richmond.—From October to December an unusually large number of cases of Malarial Fever occurred throughout the district, the disease being of a severe type.

Only nine cases of Enteric Fever seen.

An outbreak of so-called Vomiting Sickness started in February, 1915. Eleven cases were reported with nine deaths. Only three of these cases were seen during life.

One severe case of dysentery. Five cases of Pulmonary Tuberculosis.

Stony Hill.—In the third quarter of the year there were many cases of Malarial Fever in the Brandon Hill district. There was an epidemic of Influenza about the same time and in March Whooping cough made its appearance. Generally speaking the type of disease was fairly mild.

St. Ann's Bay.—Malaria Fever was prevalent during the summer months of the Intermittent type, it was confined to the lower part of the town of St. Ann's Bay.

Venereal diseases are very prevalent. So-called Vomiting Sickness claimed its usual quota of deaths and was most prevalent at the Priory.

Sav-la-Mar.—Typhoid Fever has not been common, only 16 cases of that disease with five deaths were treated in the hospital.

There have been one or two cases of Measles and Mumps. Malaria as usual is present. Five cases of Phthisis have been treated in the Poor House during the year. There were very few cases of Dysentery.

Santa Cruz.—There has been an epidemic of Mumps in this district during the year.

Ulster Spring.—Mumps prevalent during early part of the year. There were 11 cases of Amoebic Dysentery at Sawyers with 3 deaths.

Hydrophobia.—No case has been recorded as far as can be gleaned for the Annual Reports for the last 25 years. Hydrophobia does not seem to be a disease that affects either animals or man in Jamaica. With the present system of quarantine against dogs that arrive from any other place but Great Britain, there seems no likelihood of its being introduced into Jamaica unless surreptitiously.

The system of quarantine at present in vogue consists in allowing no dog to land in Jamaica unless it comes direct from Great Britain.

Return of Infective Diseases reported by the Local Boards of Health to the Central Board of Health under the Notification of Infective Diseases Law 31 of 1912, for the financial year 1914-15.

Parish.	Typhoid Fever.	Para-Typhoid Fever.	Pulmonary Tuberculosis.	Scarlet Fever.	Cerebro Spinal Meningitis.	Pneumonia.	Puerperal Fever.	Leprosy.	Diphtheria.	Beri Beri	Yaws*.	Polionyelitis.	Septicaemia.
Kingston ..	359	3	211	8	2	65	2	3	12	3	5	3	6
St. Andrew ..	57	2	38	1	3	2	1	..	1	..	..	..	..
St. Thomas ..	20	..	26	..	2	14	3	..	..	..	..	..	..
Portland ..	54	6	69	..	..	36	1	1	2	..	..	8	7
St. Mary ..	29	2	63	..	3	27	3	..	1	..	..	..	1
St. Ann ..	23	3	49	1	3	16	..	1	..	..	..	1	..
Trelawny ..	4	..	19	..	..	1	..	2	..	..	..	..	..
St. James ..	58	..	27	..	..	..	..	2	..	..	..	..	..
Hanover ..	34	..	9	..	..	1	..	..	..	..	..	..	..
Westmoreland	44	..	13	..	..	15	1	2	..	..	..	..	..
St. Elizabeth	23	..	17	1	..	5	..	..	..	..	..	..	1
Manchester ..	74	..	19	..	..	1	..	2	..	..	..	..	..
Clarendon ..	41	..	26	..	..	7	..	7	..	..	..	..	2
St. Catherine	40	4	63	..	..	23	7	1	..	..	..	..	4
	860	20	649	11	13	213	18	21	16	3	5	12	21

34. Sanitary Report of D.M.O. for Kingston.

Kingston, 24th April, 1915.

Sir,

I have the honour to submit the following report on the health of the Kingston Medical District during the financial year ended 31st March, 1915, as called for by Circular No. 716 of the 4th ultimo.

1. As far as I am aware there was no special or unusual prevalence of any disease during the year. The death rate was slightly below that of the preceding year, being 27.23 per 1,000 of population, against 29.47. There was the usual upward rise in the evidence of Zymotic diseases during the spring and autumn months with corresponding increase in the death rate, but to no marked extent. The year was one of almost continuous dry weather, and consequently a healthy one. In spite of dust the dry months are those in which the inhabitants of Kingston enjoy the best health.

2. The sanitary conditions of the city, though far from perfect, show signs of improvement from year to year.

The water supply which is obtained from three sources, The Hope, Wag Water and Ferry Rivers, is subject to a certain amount of pollution above the several intakes, but thanks to thorough and efficient filtration, the Kingston General Commissioners are enabled to deliver a pure and wholesome water to the inhabitants of the city and neighbourhood.

Waste matter and refuse are regularly collected by the carts of the Mayor and Council and conveyed to vacant land situated to the West of the city, and burnt.

Latrine system.—The greater part of the city is served by pit closets, a system of sanitary convenience as dangerous as it is detestable; considering the long period that has elapsed since the introduction of the water carriage system here, it is very disappointing that it has made so little progress. This is one of the most pressing questions that Kingston has to deal with, for the city can never hope to get into line with other civilised communities until the sewerage system is taken up and carried through in its entirety.

Surface drainage is effected by means of gullies which empty themselves into the sea, the concrete side gutters also carry off some of the slop and storm water, some of which also finds its way into the sewers.

Overcrowding is one of the outstanding features of Kingston. I have already called attention to this matter in previous reports, but so far as I know, nothing in the way of remedy has been done.

The yards and compounds round houses are, speaking generally, kept in fair order, but instances of carelessness come to notice from time to time. Water taps are frequently left open, which, besides allowing waste of water, bring about dampness and insanitary conditions, not to mention possible breed-

* Yaws is notifiable in Kingston only.

ing places of mosquitoes. A good deal of clothes washing is done in some of the small yards in the west of the city. Public washhouses are becoming a necessity, and if erected at suitable points, would contribute both to sanitation and to tidiness.

I think one may say that malaria is disappearing from Kingston, many of the cases met with come from elsewhere; with the filling up of the swamps to the east of the city the Anopheline has lost one of his principal haunts and is not so much in evidence now.

The Health Department of the Mayor & Council prosecuted its antimalarial campaign during the year.

The water supplies are protected from pollution by the vigilance of the officer of the Kingston General Commissioners.

Concrete gutters have been constructed along many of the streets and lanes, contributing to the easy disposal of slop water.

Some sewer installations have been made, thus gradually extending the water carriage system, somewhat though far too slowly.

The mortality during the year was about normal and calls for no special comment. It was as is generally the case, highest in the spring months.

The year was one of almost continued dry weather, the rainfall was one of the lowest on record. Drought does not affect the public health adversely, except indirectly through the dust, which of course, is most abundant in the absence of rain.

There was no outbreak of infective disease during the year under review. It is true that the notifications under the heads of Enteric Fever, Pneumonia and Diphtheria were much higher than in the preceding year, the figures being

	1913-14.	1914-15.
Enteric Fever ..	294	361
Pneumonia ..	23	65
Diphtheria ..	2	12

With reference to the two former diseases I think the increase is more apparent than real, and is due in my opinion to a more careful attention to the requirements of Law 31 of 1912. As regards Diphtheria I understand at least one carrier was discovered.

Pulmonary Tuberculosis accounted for 144 deaths.

Venereal diseases—Kingston is gaining an unenviable notoriety with respect to these diseases. In fact their prevalence is becoming alarming. The authorities are, I am glad to say, becoming alive to the presence of this hydraheaded monster in the community, and steps will soon be taken to deal with it. The measures will have to be drastic and far reaching to meet this social and sanitary evil.

The juvenile population is fairly well protected from small pox. 1,214 persons, practically all infants, were vaccinated by the District Medical Officer during the year. Revaccination is not compulsory and is not done.

Yaws is not prevalent in Kingston. Two cases were notified.

No cases of Hookworm disease were met with by me.

I have no means of knowing the number of lepers. I have none under my care.

Dysentery has not been prevalent.

I have, etc.,

LAWSON GIFFORD, D.M.O.

The Suptg. Medical Officer,
Kingston.

35. Sanitary Report of D.M.O. for Annotto Bay.

Annotto Bay, 13th April, 1915.

The Suptg. Medical Officer,
Kingston.

Sir,

I have the honour to acknowledge the receipt of your circular No. 716 dated 4th March, 1915.

1. There has been no unusual prevalence of any particular disease during the year under review, in fact as compared with former years there has been a decrease in the amount of sickness generally. During the year 1913-14 there were 26 cases of Typhoid Fever and 6 cases of Paratyphoid fever admitted to the hospital, whereas for the year under review there were only 5 cases of Typhoid and no cases of Paratyphoid. During the early part of 1915 there were 2 cases of so-called Vomiting Sickness.

The water supply for the town of Annotto Bay is obtained from three springs which burst out of the rock in close proximity to one another on Fort George at such an elevation as to give a good fall, therefore a good force at the supply area, and in sufficient quantity to supply all demands made on it. The water obtained from this source is of excellent quality, and has been described as being one of the best waters in Jamaica. Owing to the collection of the water not being made immediately at the spot where it comes out of the ground when heavy rains are falling the water is liable to become very dirty and to give a thick deposit on standing. This of course lays the whole supply open to the possibility of pollution.

The district of Epsom and contiguous districts obtain their water from the small streams flowing through them. The district of Enfield and all the people residing in the valley included in that district obtain their water from the upper reaches of the Dry River. In the district of Long Road the people obtain their drinking water from the Annotto River. All the other districts obtain their water from the small streams which flow through them. All these streams contain good and wholesome water but are open to and liable to all sorts of pollution, and hence do not make safe drinking water unless boiled, which the peasantry as a rule will not do.

There is a sanitary cart which removes street sweepings and house refuse at regular periods.

It has been the custom for years now to dump street and house refuse in the low lying parts of the town in Crab Hall, along the banks of the Pencar and Annatto Rivers at the south side of the stores along the main street of the town, and to the south of the houses and huts in Bottom Bay. In this way a considerable amount of swampy land has been filled in. The system is a bad one but the advantages gained outweigh the disadvantages and so the system had better continue.

There is nothing in connection with the latrines which can be called a system. All sorts of conditions exist from the open surface latrine to the aseptic tank. There are numbers of tenement houses and huts which have no latrines whatever, the occupants going into the bush. There are a large number of surface latrines, some of which are closed, but all are accessible to crabs and rats. At the Hospital, Constabulary the Government and Parochial Offices, and most of the better class residences buckets are used, most of which are emptied on the sea shore at more or less regular intervals, others are allowed to become filled and insanitary. In this connection as Medical Officer of Health I make periodical inspections of the latrines in company with the Inspector of Nuisances, and by repeated notices and warnings the people are slowly realising the necessity for paying serious attention to these matters. A good deal has been accomplished, but there is a good deal to be done before anything like a system can be established.

The house rented by the United Fruit Company as a residence for the local manager has a septic tank.

There is no system for the disposal of waste and storm water in the town of Annotto Bay. The town itself and a great part of the town of Gibraltar and Gray's Inn are so flat and lie so low that the disposal of waste and storm water is a problem which it has not been within the power of the local authorities to solve. The owner of Gibraltar is carrying out a plan for the filling in of the swamp between the Pencar River on the east, the Gibraltar road on the west, and the railway line on the north, but it is a huge task and will take many years before the individual efforts of the owner will be sufficient to fill in and do away with the entire swamp, though each year a good size piece of land is reclaimed. A good deal of good might be done and the sanitary condition of the houses greatly improved if a system of concrete drains were laid down. These could be laid on either side of the main street, where, especially about the locality of the Metcalf Hotel, the yards are actually below the level of the road surface, with drains running off at right angles from them to the sea along the small streets running northwards. In Crab Hall there is a sort of trench at the back of the houses on the north side of the street, along which the Pencar River flows when in flood, and in which after a heavy shower of rain water collects, and by keeping the land on either side of it damp makes this part of the town very unhealthy. The Inspector of nuisances has instructions to pour oil on any collections of water at intervals of not longer than a week, and I have recommended that a wide concave concrete gutter about four feet wide or wider, should be laid down from the Pencar to the Misford rivers with a slight fall from the centre towards either end. The people residing in this part of the town are attempting to fill in this low lying spot by depositing cocoanut husks and all kinds of debris and rubbish on it, but it is a slow process. At Top Bay there is a trench which runs from Gibraltar land beneath the railway and mainroad into the Pencar River. This should receive more attention than it does to keep it clean and open. I have recommended that it be concreted.

On Gray's Inn there is a large area comprising many acres of land which is constantly in a state of swamp. The only effectual method of dealing with this is filling in.

Overcrowding in houses is the universal rule. At every turn the first thing which strikes one so forcibly is the excessive overcrowding. All the houses are small and even if sufficiently large to accommodate those who live in them all the cubic space is absorbed by furniture.

In that part of the town known as Bottom Bay there is a long string of shacks, huts and small stores which are most insanitary and in which overcrowding is met with in its worst form.

The condition of the compounds and yards round houses is a matter which requires constant supervision on the part of the Inspector of Nuisances and the Medical Officer of Health, and it is only by constant inspection and warnings that the people will keep their premises in anything like a sanitary condition. The actual yards immediately surrounding the houses are for the most part in fair order and clean.

In the town of Annotto Bay the difficulty in keeping the compounds clean and tidy arises from their low level. The periodical submerging of large areas of land partly by storm water and partly by the damming up of the river mouths by the high seatides, and banking up of shingle in stormy weather keeps many acres of land in a swampy condition and affords vast opportunities for the breeding of malarial mosquitoes and others.

Owing to the low level of the land and the nature of the soil which is a dense clay and does not allow the water to soak through it into the subsoil there are very extensive tracts of land in and around Annotto Bay which are always more less in a swampy condition. This swampy condition is also very materially increased by the blocking up of the river mouths. This is especially marked in the case of the Wag Water River at Jackass Bay.

Here there is a spot where the water from the Wag Water dammed up by the high embankment of shingle along the seashore finds an outlet by flowing inland, submerging the main road and many acres of land.

Where possible stagnant water is drained or kerosene oil is poured upon the surface. But with such an enormous extent of swampy land it is impossible with the means at their disposal, for the Health Authorities to deal effectually with anything more than a fraction of the whole, and those are only within the limits of the town.

With the possible remote liability of the pollution of the water supply of Annotto Bay referred to, there is no fear of pollution. With regard to the water supply of the small villages and districts the case is very different, they are exposed to every conceivable form of pollution.

No sanitary improvements have been undertaken during the year under review beyond what I have referred to in connection with the latrines.

During the year under review there has been no unusual mortality rate from any cause.

The year 1914 was marked by unusual dryness for this part of the Island and the October seasons.

were abnormally mild. This did not affect the health of the community in any way.

There has been no outbreak of infectious or contagious disease during the year under review.

The children of the district are well protected against small pox, but I cannot vouch for the adult population because secondary vaccination is not practised.

Yaws is very prevalent in the district. It is equally common in every locality. Most of the people seen for the first time have been suffering from the disease for several weeks or months.

No prosecutions have been made under sections 2, 5 and 6 of Law 23 of 1910. Medicines have been regularly distributed during the earlier part of the period under review, but none latterly. There have been no complaints.

The number of persons known to be suffering from the Hookworm disease is: Creoles 41; Coolies, 215.

Nearly every coolie and the vast majority of the creole population are infected with Hookworm.

Lepers—None to my knowledge.

No Poorhouse.

Dysentery is not prevalent in this district the number of cases are: Amœbie nil. Bacillary, 5.

I have, etc.,

H. JOSLEN, D.M.O.

36. Sanitary report of the D.M.O. for May Pen.

May Pen, April 24th, 1915.

The Hon.

The Suptg. Medical Officer,

Sir,

I have the honour to acknowledge the receipt of your circular No. 716 dated 4th March, 1915, asking for the Annual report of the Four Paths Medical District for the financial year ended March 31st, 1915.

2. Prevalence of sickness in the different seasons of the year, etc.

The public health of the district of Four Paths which includes the middle portion of Clarendon and is bounded on the north roughly by a line connecting the villages of Rest and Hayes and continued to the sea, has for the last 12 months under review presented nothing worthy of special notice. So far as I am personally aware the past year has been a very healthy one. There has been no serious outbreak of any epidemic disease. Malarial Fever cases have been remarkably few in number and seem to me to be getting less each year. This no doubt is largely due to the long succession of dry years. This portion of the parish is practically entirely devoid of marsh lands and stagnant pools, and possesses no streams, except at its western border (Milk River). There are therefore no natural breeding grounds for malarial mosquitoes, added to this the large public consumption of quinine procured at the District Post Offices at very cheap rates, and the free distribution of quinine in the public schools has also tended to reduce the occurrence or prevalence of the disease. The recent sanitary measures that have lately been in force in the town of May Pen have almost completely eradicated this tropical disease from the town; it was far different when I came here eleven years ago, when malarial fever cases formed a large percentage of those met with in general practice. I consider May Pen to be one of the most healthy low land towns in this Island.

A few cases of Vomiting Sickness are reported to have occurred during the month of March, 1915; it was late in making its appearance and did not assume the terrible widespread distribution that it did two years ago. I saw no cases alive, but performed post mortems on two children, who undoubtedly died from this disease. There is no other disease that requires any special mention as regards frequency or mortality. Below I give a list of cases of notifiable diseases which came under my personal observation during the year:—

A.S.	40 years	F. Parnassas	Enteric Fever	6.4.14	Death.
J.S.	30 "	M. Alnshouse	Pulm. Phthisis	27.4.14	"
K.T.	22 "	F. Roswell	"	18.5.14	"
A.S.	21 "	F. Bird's Hill	" (Pauper)	19.7.14	"
E.F.	20 "	M. Alnshouse	Enteric Fever	25.8.14	"
J. McP.	15 "	M. Comfort	"	2.9.14	Recovery.
M.T.	17 "	F. May Pen	"	19.10.14	"
M.R.	20 "	F. "	"	29.11.14	"
N.T.	9 "	M. "	" and Pneumonia	4.1.15	?
J.H.	30 "	M. Sheckles Pen	Enteric Fever	24.1.15	Recovery.
L.M.B.	15 "	F. Cheap Pen Hill	Pulm. Phthisis	18.3.15	Death.

There were 7 cases of Enteric Fever and 5 cases of Pulmonary Tuberculosis that came under my observation. This no doubt does not include all the cases which occurred in the district. Many must have been treated by private practitioners located in the district. I think that a monthly return of all notifiable diseases which occur in the practice of private practitioners should be sent in by them to the Medical Officer of Health for the district in which they occur, in order that he may be kept in touch with the prevalence or otherwise of these diseases, and be in a better position to report upon the health conditions of the district of which he is officially in charge.

Pulmonary Tuberculosis so far as my personal experience goes, is not a very prevalent disease and does not affect the mortality rate to any extent.

Protection against Smallpox—515 successful vaccinations were performed during the year, 365 of which were under 1 year of age. The infantile population is well protected against smallpox, the adult population entirely unprotected as re-vaccination is not compulsory, and never sought for.

Yaws is endemic chiefly in the mountainous inland parts. During the month of December, 1914, I visited the following places and inspected cases of this disease: Smoky Hole, 19; Whitney Town, 16; Rock, 48; Mocho, 23; Whitechapel, 21; six cases were reported to be at Richmond Park, and seven cases at Rosewell. Most of the cases seen for the first time had only recently contracted the disease.

During a part of the year the free distribution of medicines was stopped, and after a time resumed. No prosecutions for breach of the Law were made. As far as I could ascertain the medicines were dis-

tributed regularly by the District Constables, but whether the medicines are properly and continuously used by the people is more than I can tell. I have no means of knowing. I expect in many cases it is not. Towards the end of February, 1915, the Government ceased the free distribution of Yaws medicine through the District Constables, and the work has been discontinued. The probability is that the disease will increase during the present year as the people cannot afford to pay for medicines and probably would not if they could.

Ankylostomiasis or Hookworm disease is prevalent in this district as it is in most of the country parts of the Island, but very few cases are seen in private practice. Of 16 specimens of fæces sent up from the Almshouse during the year 9 had ankylostoma alone, 3 had ankylostoma tricocephalus and ascaris. 2 had ankylostoma and ascaris, 1 had ascaris only, and one had none of either.

No cases of leprosy have been seen by me during the year, though I believe there are one or two cases hidden away in the district.

Only one case of Phthisis died in the May Pen Almshouse during the year.

Very few cases of dysentery occurred; this disease never assumed an epidemic character, what cases did occur were all of the bacillary type.

Report on the sanitary conditions prevailing in the chief towns and villages, etc.—

Water Supply—May Pen.—The water supply of this town has been the subject of lengthy reports by me for the last eleven years, a monotonous reiteration of inefficiency and irregularity; what was written years ago applies equally well to-day. Frequent interruptions from constant breakages in the mainpipe, daily cessation of the flow in the taps owing to leakages not yet discovered; a heavy drain on the supply owing to large quantities of water being taken at all hours of the day by the railway engines at the May Pen Station result in a most inadequate and insufficient supply to the ratepayers of the town, and are a constant source of annoyance, worry and dissatisfaction. A large amount of money is wasted yearly on useless repairs to old and worn out mains; as soon as one fracture is repaired another occurs, and as a result the money expended each year in repairs leads to no permanent improvement in the supply. The water is in no way protected from pollution there is absolutely no filtration, as it leaves the river bed so it flows through the taps, probably even more impure than when it left the river, owing to accumulation of dirt, etc., in the mains, which so far as I know are never flushed out.

The May Pen Water Works supplies (sic) not only the inhabitants of the town of May Pen and the Jamaica Railway, with water, but also the inhabitants of the neighbouring districts.

During periods of drought (which have been constant during the last few years) the four standpipes situated at the four extremities of the town, supply the inhabitants of the country parts with water and also their stock; the pipes are kept open all day and often far into the night, causing a constant drain on the supply and the cessation of the flow in the taps of the unfortunate ratepayers who live beyond the standpipes. If it were not for the May Pen water works, these country people and their stock would die of thirst during the greater part of the year. It has proved to be a boon and a blessing to them, and this fact should be borne in mind by those whose duty it is to see that the May Pen water works be kept in proper order. It is not only a supply for the water ratepayers of the town but gives water to the thousands of people and beasts living in the country who without it would perish of thirst.

Four Paths.—The inhabitants of this village and district are in a chronic state of want of water. This has been known to the Parochial Board for many years. There is a well in the Four Paths Market 151½ feet deep. Owing to reports made to me concerning the bad quality of the water in the well, I sent a sample in September, 1914, to the Island Chemist and Government Bacteriologist for examination. Both condemned the water for dietetic purposes. During periods of drought, when the rain water collected in puncheons and small tanks is finished, the inhabitants have no water supply—crowds flock around the engines at the Station and get a little water in this way. The Sheekles Pen well is not open to the public, many travel to Denbigh Estate and get water from the well there—others drink the water in the stagnant half empty wholly foul ponds, which exist at a few spots near by. A large number send to May Pen for water—four miles away. In circumstances of this nature it is not hard to imagine what percentage (if any) of this valuable fluid is consumed for hygienic purposes.

The same condition holds good generally for Tollgate, though water is available at the Spanish well some three or four miles away.

In the mountainous parts, Mocho, Buxton Hill, Rock, Stewarton, Richmond Park, etc., the supply depends entirely on small tanks and surface ponds, these baths contain water in a most filthy condition—one of the chief causes of Hookworm and allied parasitic intestinal diseases. A large public tank was to have been built at Rock and one at Mocho—the estimates and plans were prepared and the money voted but nothing further has been done.

Disposal of waste matter, etc.—In the town of May Pen the sweepings of the streets, market, and the contents of garbage receptacles of some of the yards are removed in a wheel barrow (one) by a man and deposited in the public dumping ground which is within the precincts of the town.

On several occasions since May, 1906, I have urged the Local Board of Health to provide a parochial cart for this purpose. The heaps of refuse in the various yards and compounds are destroyed by burning—the contents of the latrines which have buckets or boxes are emptied at night in pits dug in the deposit ground.

Only a small portion of the street of the town of May Pen is swept; this amount is by contract. It would be more satisfactory if it were done by paid servants of the Local Board of Health who would be under the direct control of the Sanitary Inspector. In Four Paths there is nothing done in this direction beyond the individual effort of the inhabitants.

Latrine system.—In January 1915 there were in May Pen—

- 50 open surface latrines.
- 27 latrines with buckets or boxes.
- 5 latrines flushed with water.
- 7 latrines with pits.

There were 106 inhabited spots without latrines.

In Four Paths, the Railway Station and the Police Station have latrines with buckets, some of the dwellings have open surface latrines and a good many have none.

Drainage.—Surface only.

Condition of compounds and yards, etc.—As a result of the large number of visits paid by the Sanitary Officer of the town of May Pen during the year, the yards and compounds are in a much improved sanitary condition to what they were twelve months ago—a large amount of cleaning and bushing has been done, and this has resulted in the destruction of clumps of penguin and the burning of refuse of all kinds. The yards are kept clean of bush and refuse and the general condition of most of the latrines has much improved.

During the year the Medical Officer of Health paid over 253 visits of inspection (unrecorded visits not included) and the sanitary inspectors paid 1,072 visits of inspection, served 165 notices and wrote 12 letters.

In Four Paths a few compounds have been cleaned, but not much has been done in this direction. A better paid and stronger sanitary inspector is required for this village.

Breeding of mosquitoes.—This has been dealt with in a previous paragraph. In May Pen constant supervision has been kept over the taps in the various yards, so as to prevent the occurrence of pools of water favourable to mosquito production.

Pollution of water supply.—This has already been dealt with.

Sanitary improvements.—In May the beef stalls in the market have been enclosed with wire netting to keep out flies, the stalls have been repaired and the buildings painted. The May Pen Market is in very good order indeed.

A concrete drain has been laid across the market enclosure, which leads off the storm waters and the overflow from the water tap. New latrines with buckets in connection with the market have been constructed.

An absorption pit has been constructed which receives the excreta from the public latrine at the Court House, and the concrete drains in connection therewith repaired.

I have, etc.,

E. R. C. EARLE, D.M.O.

37. Return showing the number of admissions to the Country Hospitals during the last eleven years.

Hospital.	1904- 1905.	1905- 1906.	1906- 1907.	1907- 1908.	1908- 1909.	1909- 1910.	1910- 1911.	1911- 1912.	1912- 1913.	1913- 1914.	1914- 1915.
Morant Bay	393	469	510	534	660	531	545	782	730	713	688
Hordley	387	587	707	555	629	621	537	918	1,294	1,777	1,431
Port Antonio	1,257	1,673	1,788	3,359	3,674	3,200	4,288	5,680	6,110	5,170	5,423
Buff Bay	2,274	734	654	937	935	755	1,216	1,341	1,961	3,516	3,494
Annotto Bay	1,147	3,739	4,313	4,641	5,338	5,005	6,138	5,558	5,169	4,440	3,934
Port Maria	1,360	1,610	1,388	1,380	1,584	1,837	2,502	2,627	2,532	1,984	1,931
St. Ann's Bay	191	194	252	285	264	219	235	274	414	429	394
Cave Valley	66	76	87	83	93	91	81	98	101	95	87
Falmouth	313	238	262	209	252	330	308	276	315	192	185
Ulster Spring	..	..	..	..	..	..	..	..	..	..	44
Montego Bay	268	302	266	228	228	180	337	494	796	871	698
Lucea	290	276	224	244	241	237	296	295	284	581	435
Sav.-la-Mar	228	226	1,026	861	857	800	1,961	1,440	1,989	3,996	2,732
Black River	310	274	301	385	321	305	285	316	343	342	344
Mandeville	287	312	323	259	245	283	281	401	415	377	428
Chapelton	207	331	480	489	335	344	364	424	530	384	452
Lionel Town	906	1,533	3,532	2,062	1,852	2,070	1,700	2,547	2,497	2,636	1,802
Spanish Town	854	1,160	1,360	1,262	1,260	1,379	1,144	1,544	1,857	1,601	1,577
Linstead	150	..	..	..	..	..	121	195	494	458	395
	10,888	13,734	17,473	17,773	18,768	18,187	22,339	25,210	27,831	29,562	26,474

38. Return showing the various classes of patients admitted to Public General Hospitals with Nos. of each, also amounts received from Paying Patients.

Hospital.	Constables.	Paupers on pauper roll.	Casual paupers.	Poor persons admitted without charge.	Poor persons attended as outpatients in connection with hospital outpatients system.	Indentured Coolie labourers.	Prisoners.	Paying patients.	Maintenance Dues.	
									Received.	Dues.
									£ s. d.	£ s. d.
Morant Bay	46	2	407	..	658	219	4	12	4 5 0	..
Hordley	136	4	..	314	193	884	4	11	10 18 6	..
Port Antonio	26	1	..	1,793	1,809	3,710	6	33	88 1 6	..
Buff Bay	17	19	41	1,192	889	2,208	5	12	6 7 6	..
Annotto Bay	14	..	..	613	206	3,303	5	..	..	..
Port Maria	37	3	..	717	582	1,166	2	6	19 13 10	..
St. Ann's Bay	13	..	..	385	674	2	..	8	5 18 6	..
Cave Valley	3	2	16	53	17	..	..	20	11 5 0	..
Falmouth	15	3	..	177	551	2	..	2	2 12 6	..
Ulster Spring	..	6	11	20	19	..	..	7	2 19 6	..
Montego Bay	25	2	..	351	3,040	374	2	..	..	..
Lucea	28	..	..	381	1,117	14	1	11	8 14 0	5 9 6
Sav.-la-Mar	30	..	100	251	30	2,495	7	16	5 18 0	11 17 6
Black River	21	..	..	232	1,099	86	1	4	2 8 0	4 17 4
Mandeville	10	1	407	..	291	..	2	8	1 4 0	4 3 0
Chapelton	19	60	..	417	751	..	2	14	10 6 6	..
Lionel Town	14	21	225	450	623	1,159	1	14	6 2 0	..
Spanish Town	66	..	..	1,256	2,029	184	..	4	5 19 6	..
Linstead	..	..	..	358	1,983	26	..	11	..	4 11 6
	520	124	1,207	8,960	16,561	15,832	42	193	192 13 10	30 18 10

39. TABLE No. 1.

Hospital.	Mortality Rate.			Largest Daily No.			Smallest Daily No.			Daily average.			Date of largest daily number of Patients.	Date of smallest daily number of Patients.
	Coolies.	Creoles.	Total	Coolies.	Creoles.	Total	Coolies.	Creoles.	Total	Coolies.	Creoles.	Total		
Morant Bay	1.1	4.2	3.1	6	30	36	4	11	15	6	23	29	4.4.14	27.3.15
Hordley	.6	3.3	1.5	43	40	83	20	22	42	30	33	63	7.1.15	15.9.14
Port Antonio	.26	3.12	1.22	120	91	211	36	59	95	69	83	152	3.11.14	28.3.15
Buff Bay	1.01	2.59	1.6	149	91	240	50	78	128	97	79	176	10.6.14	26.4.14
Annotto Bay	.42	2.82	.82	167	54	221	46	29	75	97	41	138	14.12.14	12.3.15
Port Maria	.7	8.2	2.8	60	41	101	32	17	49	41	31	72	1.12.14	28.3.15
St. Ann's Bay	..	4	4	1	30	31	1	9	10	1	21	22	December	April
Cave Valley	..	..	..	..	10	10	..	2	2	..	6	6	9.7.14	21.7.14
Falmouth	..	6.09	6.09	1	20	21	1	6	7	1	13	14	20.1.15	19.4.14
Ulster Spring	..	..	..	..	7	7	..	2	2	..	4	4	31.10.14	1.9.14
Montego Bay	8	8.2	4.5	32	32	64	2	16	18	18	32	50	28.8.14	March
Lucea	..	4.2	4.2	5	35	40	..	12	12	1	21	22	2.4.14	13.3.15
Sav.-la-Mar	.53	7.56	1.31	163	29	192	75	6	81	107	22	129	15.7.14	3.1.15
Black River	.11	5.81	4.66	12	21	33	1	10	11	2	17	19	10.2.15	9.1.15
Mandeville	..	5.7	5.7	..	37	37	..	15	15	..	29	29	29.8.14	16.3.15
Chapelton	..	6.7	6.7	..	50	50	..	23	23	..	37	37	20.6.14	18.12.14
Lionel Town	1.6	4.6	2.5	52	52	104	21	25	46	32	41	73	25.5.14	19.3.15
Spanish Town	1.9	8.3	6.2	49	111	160	29	68	97	39	90	129	13.7.14	28.3.15
Linstead	..	4.5	4.5	3	42	45	1	23	24	1	35	36	1.9.15	5.9.14

40. TABLE No. II.

Hospital.	Remaining in Hospital 1.4.14.			Admissions.			Discharged.			Died.			Remaining in Hospital 31.3.15.		
	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.
Morant Bay	6	27	33	245	443	688	242	439	681	3	20	23	4	13	17
Hordley	23	27	50	974	457	1,431	936	453	1,389	6	16	22	23	25	48
Port Antonio	59	87	146	3,651	1,772	5,423	3,662	1,750	5,412	10	58	68	38	51	89
Buff Bay	62	66	128	2,210	1,284	3,494	2,197	1,256	3,453	23	35	58	52	59	111
Annotto Bay	51	40	91	3,302	632	3,934	3,275	629	3,904	14	19	33	64	24	88
Port Maria	38	31	69	1,402	529	1,931	1,392	496	1,888	11	46	57	37	18	55
St. Ann's Bay	..	14	14	3	391	394	2	374	376	..	17	17	1	14	15
Cave Valley	..	7	7	..	87	87	..	88	88	..	..	..	..	6	6
Falmouth	..	14	14	2	183	185	2	172	174	..	12	12	..	13	33
Ulster Spring	..	..	..	..	44	44	..	40	40	..	..	..	..	4	4
Montego Bay	24	30	54	350	348	698	364	333	697	3	31	34	7	14	21
Lucea	1	32	33	15	420	435	16	414	430	..	21	21	..	17	17
Sav.-la-Mar	144	23	167	2,451	281	2,732	2,519	260	2,779	14	23	37	62	21	83
Black River	..	21	21	88	256	344	87	253	340	1	16	17	..	8	8
Mandeville	..	27	27	..	428	428	..	406	406	..	26	26	..	24	24
Chapelton	..	43	43	..	452	452	..	393	393	..	33	33	..	26	26
Lionel Town	43	39	82	1,262	540	1,802	1,259	524	1,783	21	27	48	25	28	53
Spanish Town	48	64	112	521	1,056	1,577	529	963	1,492	11	94	105	28	64	92
Linstead	..	28	28	26	369	395	25	354	379	..	18	18	1	25	26
	499	620	1,119	16,502	9,972	26,474	16,057	9,597	26,104	117	512	629	342	454	796

41. *Summary of Diseases, Financial Year, 1914-1915.*

Diseases.	Cases.	Deaths.	Diseases.	Cases.	Deaths.
Measles	3		FUNCTIONAL DISORDERS—		
Influenza	18		Apoplexy	10	3
Diphtheria	2		Paralysis	32	5
Small Pox	2		Chorea	2	
Mumps	5		Epilepsy	30	
Enteric Fever—			Neuralgia	133	
(a) Typhoid	226	58	Hysteria	31	
(b) Paratyphoid	19	5	Convulsions	2	
Dysentery—Bacillary	65	14	MENTAL DISEASES—		
Malarial Fever—			Mania	9	
(a) Intermittent	6,710	40	Melancholia	4	
(b) Remittent	183	18	Dementia	8	1
(c) Pernicious	14	4	Delusional Insanity	4	
Black Water Fever	2	1	LOCAL DISEASES—		
Erysipelas	1		Diseases of the—		
Pyæmia	3	1	Eye	309	
Septicaemia	20	8	Ear	78	
Tetanus	21	8	Nose	17	
Tubercle—			Circulatory System	174	40
(a) Pulmonary Tuberculosis	142	47	Respiratory “	682	54
(b) Disease of Bones	13	1	Disgestive “	1,395	88
(c) Gland Affections	20	3	Lymphatic “	230	1
(d) Disease of Joints	6		Urinary “	493	45
Yaws	696		Generative System—		
Syphilis—			(a) Male organs	430	7
(a) Primary	176		(b) Female Organs	463	8
(b) Secondary	214	9	Organs of Locomotion	147	4
(c) Tertiary	89	5	Cellular Tissue	798	10
(d) Inherited	151	2	Skin	4,533	8
Gonorrhœa	513	1	Injuries General	180	17
Chancroids	7		“ Local	1,701	17
Alcoholism	11		Malformations	4	
Leprosy—			Poisons	9	1
(a) Tubercular			Hookworm Disease	278	5
(b) Anæsthetic			Parasite—Infected by—		
Rheumatism	896	1	(1) Anchylostoma Duoden-		
New Growths—			ale	1,317	12
(a) Non malignant	57	1	(2) Tænia Solium	2	
(b) malignant	54	7	(3) Ascaris Lumbricoides	24	1
Anæmia	84	3	(4) Trichina Spiralis	1	
Diabetes—mellitus	3	2	(5) Ringworm	19	
Debility	55	5	(6) Myiasis	1	
Beri-Beri	4		(7) Itch	375	
Pellagra	8	3	(8) Any other variety	37	
Vomiting sickness (so-called)	20	4	Pregnancy	18	1
DISEASES OF NERVES—			Premature Birth	4	4
Neuritis	96	1	No Disease	2,224	
Meningitis—				26,875	610
(a) Cerebro Spinal	6	5	Total number of cases—26,875		
(b) Tubercular	2	2	Total number of Deaths 610		
(c) Other varieties	5	5	Death rate 2.232%		
Myelitis	1				
Hydrocephalus	1	1			
Abscess of Brain	1	1			
Congestion of Brain	4	1			

42. *Surgical Operations, Financial Year, 1914-1915.*

Operations.	Cases.	Deaths.	Operations.	Cases.	Deaths.
Abscesses, Incision of	519		Amputation—		
Abdominal Section—			Foot (Symes)	2	
Volvulus of Sigmoid	2	1	Leg (Thigh)	35	
Laparotomy	30	7	Digits	74	
Hysterectomy	5		Penis	33	
Ovariectomy	3	1	Forearm	9	1
Ectopic Gestation	4	1	Breast	14	
Appendectomy	1		Bladder and Urethra—		
Paracentesis Abdominis	26	1	Stricture, Dilation of	169	
Tapping Ascitis	4		Internal Urethrotomy	3	
Washing out Stomach	10		External “	7	
Aneurism—Ligature of Artery	3		Perineal Section	23	3

Operations.	Cases.	Deaths.
Perineal Abscess ..	8	1
Retention of Urine ..	17	
Washing out Bladder ..	5	
Bones—		
Necrosis ..	25	
Osteotomy ..	3	2
Periostotomy ..	1	
Sequestrotomy ..	16	
Ununited fractures ..	1	
Eye on—		
Pterygium ..	2	
Iridectomy ..	7	
Conical Cornea ..	1	
Ext. of Cataract <i>cum</i>		
Iridectomy ..	4	
Exterpation of Globe ..	33	
Foreign bodies removed from—		
Ear ..	10	
Foot ..	18	
Nose ..	3	
Eye ..	4	
Hand ..	5	
Throat ..	1	
Finger ..	4	
Abdomen ..	1	
Bladder ..	1	
Rectum ..	1	
Jaw ..	1	
Face, Nose, Mouth, etc.—		
Nasal Polypus (Rem.) ..	3	1
Herelip ..	1	
Tonsils removed ..	36	
Joints—		
Arthrotomy ..	9	2
Reduction of ..	4	
Ankylosis ..	3	
Excision of ..	3	
Lymph Glands—		
Excision of ...	81	
Incision of ..	1	
Scraping and Cauterizing ..	10	
Hernia—		
Reduction of ..	4	
Radical cure for ..	17	
Herniatomy for Strangulated		
Hernia ..	7	4
Fractures, Simple and Compound	186	
Male Generative Organs—		
Paraphymosis ..	16	1
Radical cure for Hydrocele ..	16	
Tapping Hydrocele ..	40	
Amputation of Scrotum ..	1	
Circumcisions ..	177	
Chancroids Cauterizing ..	33	
Gonorrhoeal Warts ..	1	

Operations.	Cases.	Deaths.
Female Generative Organs—		
Curetting ..	63	
Artesia Vagina ..	6	
Hysceropaxy ..	3	
Uterine Polypus ..	1	
Retained Placenta, removal of ..	3	
Aenal Fissure ..	1	
Rectum & Anus—		
Fistula in Ano ..	10	
Rectal Abscess ..	5	
Hæmorrhoids, Ligaturing ..	28	
Nails removed ..	42	
Plastic Operation—		
Arm ..	5	
Vagina ..	1	
Scrotum ..	1	
Dislocations—		
Shoulder ..	6	
Jaw ..	1	
Thumb ..	1	
Elbow ..	3	
Incisions, Cellulitis & Car-		
buncle ..	38	1
Trephining & Cleaning ..		
Mastoid cells ..	10	1
Trephining & Raising De-		
pressed bones ..	2	
Tendons—		
Saturating of wounds ..	107	
Tenotomy ..	4	
Tumours & Cysts—		
Carcinoma ..	22	
Bursal Tumour ..	8	
Adenoids ..	10	
Cystic Tumour of jaw ..	4	
Hæmatoma Pectoralis Major ..	3	
Fibroma ..	11	1
Lipoma ..	5	
Papilloma ..	1	
Mibomian Cyst ..	3	
Sabaceous Cysts ..	7	
Ganglion ..	2	
Exam. under Chloroform ..	17	
Scraping Chronic Ulcers ..	74	
Extraction of Teeth ..	423	
Slitting up Sinus ..	36	
Slitting up Prepuce ..	4	
Prostatectomy ..	3	1
Drainage of Empyema ..	1	
	<hr/>	<hr/>
	2,749	30
Total number of cases—	2,749	
Total number of deaths ..	30	
Death rate 1.09%		

43. MANNING HOME REPORT,

Black River, April, 1915.

Hon. Dr. J. Errington Ker, S.M.O.

Sir,

I beg to present to you my report of the Manning Home for the period extending from 1st April, 1914—March 31st, 1915.

During the above period I have treated 235 cases suffering as follows:—

Diarrhœa, 30; Influenza, 124; Pharyngitis, 3; Ulcers, 8; Abscesses, 5; Tonsillitis, 1; Parotitis, 20; Anæmia, 4; Pellagra, 18; Onychia, 1; Ulcerative Stomatitis, 20; Ear disease, 1.

There have been epidemics of Influenza, Diarrhœa, Stomatitis and Parotitis (Mumps), but prompt treatment having been administered, I am pleased to report rapid recovery in every instance.

In February last, following a cold wave which swept over the whole parish, and particularly so over the exposed elevation on which the Home stands, you will not be surprised to learn that thirty of the little ones suffered from an aggravated form of Bronchial affection, and I was kept rather anxious expecting at every moment to find cases of pneumonia developing when the low vitality of these children is considered, coupled with the light summer clothing with which they are accustomed. I am however particularly glad to report that all the cases after a duration of about ten days to three weeks, recovered, allowing me to present to you a clean mortality sheet. I have discovered 18 cases of Pellagra, but only two or three aggravated ones. I found it advisable and quite workable to leave made up preparations with the Matron in charge to administer in cases of simple ailments, such as bowel complaints, so prevalent among children; ointments and lotions for ulcers and skin affections, which have proved helpful to sufferers and staff alike.

I would recommend a supply of warm clothing to guard against a possible cold wave such as that already referred to, also an additional supply of blankets.

I must add that several underfed and badly nourished children have from time to time been transferred to the Almshouse where better housing accommodations can be obtained, and in the absence of the physician, the qualified dispenser is always in residence, which is not the case at the Manning Home. A good and constant water supply taken from a public tank in close proximity is being used in this Institution. The children on admission are for the most part underfed and emaciated in form. There have been no fatal cases during the two years of its existence, this points to the careful attention paid to the inmates by Miss Myers, who, until two months ago was Matron in charge, as well as Miss Nation her successor.

I have, etc.,

R. M. STIMPSON.

44. LITERATURE PASSED ROUND THE DEPARTMENT.

Extracts from Royal Army Medical Corps Journals with regard to the treatment of Syphilis by means of Salvarsan (606).

Report of Imperial Cancer Research Committee.

Pamphlet on Hookworm, published by the State Board of Health, Florida.

Dr. Seidelin's report of so-called Vomiting Sickness.

Extract from "The Practitioner" with reference to the use of Carbolic Acid in the treatment of Tetanus.

Brochure on Hookworm disease by C. W. Styles.

Report by Dr. Ferguson on Hookworm and Malaria in British Guiana.

45. QUARANTINE.

Chairman and Members, Quarantine Board.

I have the honour to submit the following report on quarantine for the period April 1st, 1914, to March 31st, 1915.

2. In April, 1914, cases of Small-pox appeared in the Islands of Grenada and Guadeloupe, at Santa Marta in the Republic of Colombia, and Baltimore, U.S.A.

3. In May, 1914, an outbreak of small-pox at Galveston was reported.

In June similar cases were reported from Nevis and Martinique. In December, 1914, Galveston again reported the disease and in March, 1915, Georgetown, British Guiana, notified such cases.

The usual regulations for this disease were in each case put in force, as soon as cases were reported, and with satisfactory results, as not a single case of small-pox has been reported in Jamaica during the period under review.

5. Cases of small-pox frequently occur in cities of the United States, with which this Island has communication and precautions are taken to prevent the introduction of the disease, as the circumstances in each case call for.

6. There have not been many cases of Yellow Fever in countries with which this Island has frequent communication. Yellow Fever appeared in Maracaibo in August, 1914, in St. Vincent in September and October, in Cayenne in October, and in Caracas in December.

The danger of this disease being introduced from the places named was remote, as there is as a rule no direct communication with any of them except Caracas, and vessels arriving from the Port for that town are required to undergo fumigation before being given pratique here.

7. Since the appearance of Plague in Trinidad a few years ago, this disease has, as usual, claimed the most serious attention of the Quarantine Board.

Cases have occurred during the year in Havana and Santiago de Cuba, New Orleans, Liverpool, Venezuela, Argentine, Brazil, Ecuador, Chili and Peru.

8. The appearance of plague in both man and rat at Santiago de Cuba, constituted a serious menace to the health of this community as it is only about 18 hours steaming from here.

9. The usual measures to prevent the introduction of this disease were consistently and carefully carried out throughout the year in regard to each infected country.

10. The plague situation in Havana and Santiago seems to present a feature which is somewhat different to other places in which the disease has appeared, namely, the small number of infected rats found on examination; only two being reported as having been found at Havana and four at Santiago.

11. At New Orleans where the number of cases was about the same as in Cuba over 200 plague infected rats have been found. The same held good in respect of Porto Rico in 1912.

12. In May the British Minister at Bagota, on information supplied by the Government, reported the existence of Plague on the Atlantic seaboard of the Republic of Colombia.

This report seriously dislocated the shipping in this Island, as several vessels touch at Colombian ports after leaving Jamaica, and also prior to calling here.

13 The report of Plague in Colombia constituted, with the exception of Santiago, the most serious menace to which this Island has been exposed, both on account of the proximity and the frequency of the communication.

14. Prompt and drastic measures were put in force against vessels from Colombian ports, much to the inconvenience of all concerned.

15 A report of Plague in the Republic of Colombia had been made about a year before, which report fortunately turned out to be septic pneumonia, and it was hoped by all that the second reported outbreak might also not be plague.

16. An expert Bacteriologist, Dr. Darling, in the employment of the Isthmian Canal Commission, was sent to Colombia to investigate the disease. He reported that there were no cases of plague and no evidence to support the statement that there had been.

17. The Government Bacteriologist from Bagota met Dr. Darling, who convinced him that the disease was not plague; this was shortly afterwards accepted by the Government of Colombia, and on receipt of this information, the restrictions in force here against Colombia were at once withdrawn.

18. Cases of Plague have not been reported from Trinidad or Porto Rico, in either man or rats, since 1912, so that there is now good grounds for hoping that the disease has been eradicated from both Islands, which speaks well for the effective measures taken. They are certainly the first localities in the West in which plague having made its appearance seems to have been got rid of.

19 Plague was introduced to the Pacific seaboard of the United States a few years ago, and although the most stringent measures have been taken for its eradication and are still in force, occasionally a case in the human occurs and more frequently in animals.

20. The town of New Orleans has made great efforts to free itself from Plague, but so far without success. Cases in the human have not occurred for some time, but every week plague infected rats are found.

Extensive rat proofing of houses is being carried on and it is hoped that the disease will gradually be eradicated.

21. The regulations of the Board have on the whole worked very smoothly during the period under review.

The Agents of vessels are now endeavouring to conform to the Regulations in force from time to time, and this tends greatly to facilitate shipping.

22. Tourist steamers and yachts occasionally find themselves placed in quarantine on arrival here. This might be easily avoided by a little thought on the part of the Captain of such vessels, by keeping clear of infected ports as far as possible and when it is necessary to call at an infected port the vessel should not go alongside nor take stores on board, and were this done and a certificate brought from the British or American Consul certifying to this effect they would find very little trouble on arrival here, and would be able to enjoy the beauties of our Island, instead of suffering from attacks of nerves brought on by imaginary grievances.

23. Arrangements have been made by the Government with the British Consul in all countries in the Western Hemisphere for the immediate notification by cable of cases of infective disease, and in the case of Plague suspected cases are to be reported by cable, and confirmed or otherwise as soon as the diagnosis is complete.

This arrangement is very complete, and with care on our part we hope to be able to keep the Island free from plague or other such serious infective diseases which after all is the sole object of the Quarantine Board's existence.

24. During the year Medical men as Health Officers were appointed at Port Antonio and Montego Bay. This was discontinued at the end of the year under review due to the necessity for retrenchment. The quarantine arrangements for dealing with vessels being now so strict that it was considered unlikely that there would be any risk in reverting to the system of Visiting Officers which was the system up to a year ago.

25. The number of vessels arriving at Port Antonio and Montego Bay are greater than at any other outport. It is however not the number of arrivals but the places from which they come that constitutes the danger, and this should be effectively met by the Regulations, while in any case of sickness on board, the Visiting Officers are authorised to call in the District Medical Officer and in his absence any available Medical Practitioner.

26. Our second line of defence is confided to the care of the Local Boards of Health and in order to assist in preventing the introduction of infective disease their constant co-operation is necessary in the form of general sanitary measures, and in regard to plague, a systematic deratization service. Deratization measures are of special importance at Ports at which vessels from other countries call.

The chief consideration in the matter of deratization is the destruction of rats along the seafront. Destruction of rats inland is of secondary importance, but still not a thing to be overlooked, inasmuch as rat plague if it by any chance enters a seaport town may very easily extend inland, due to commerce before any cases of human plague have been diagnosed.

In catching rats caged traps are preferable, as the animal is then found alive, and can be killed, and at once immersed in a disinfectant, and thus prevent the spread of the fleas.

27. Occasionally articles appear in the local press from both medical men and laymen which would lead one to believe that quarantine had been abolished in practically all countries save Jamaica. An acquaintance with the Quarantine Regulations of countries in the West would very soon dispel such delusions which can only be the result of interest or want of knowledge.

28. The importance of Hydrocyanic Acid Gas as a fumigation medium has been shown very much.

29. During the year the Hon. E. A. H. Haggart resigned from the Board and Dr. Scott was appointed a member in his place. S. B. Cockell, Esq., Dr. Saunders and Colonel Wilson were granted leave of absence, and E. G. Orrett, Esq., was appointed to act for Mr. Cockell, Colonel Harrison for Colonel Wilson, and Dr. Williams for Dr. Saunders. Colonel Harrison also left the Island on sick leave, and Major Weston, R.A.M.C., was appointed in his place.

30. The following places were proclaimed during the year:

Cuba for plague.

Venezuela, for Plague.

State of Louisiana, U.S.A., for plague.

Ecuador, for plague and yellow fever.

Peru, for plague.

Chili, for plague.

The proclamations are still in force.

31. A land telephone between the Public Hospital and the residence of the Health Officer, Port Royal, was installed during the year, but so far it has not been of much assistance as the noises are so great that it is difficult to take a connected message, and on this account an important message could not be accepted by telephone. Once it is in order it will be a great assistance and facilitate very much the rapid handling of shipping.

32. The telephone to the Quarantine Station is still out of order, although this could be made serviceable at a small cost. When passengers are confined therein its absence is much felt as also in connection with the disinfection of passengers' baggage.

33. The two Clayton Disinfectors have been installed on a lighter lent temporarily by the Penitentiary.

Both machines are in thorough order and are working satisfactorily. The lighter is too small but will do until a proper one is provided.

During the year 47 vessels were fumigated.

Provision for a mechanic to drive and attend to the disinfectors has been made in the Estimates for 1915-16 and it is hoped he will be employed in securing great efficiency in the disinfectors, and also in the observance of Quarantine Regulations by vessels when in port.

34. The Quarantine Station is in very good order and thoroughly equipped.

The steam disinfecter has been in frequent use in disinfecting passengers' baggage landed there. The machine is in good working condition.

During the year 608 persons were confined at the Quarantine Station. No infective disease developed amongst any of the passengers detained there. During the year 2,068 packages of passengers' baggage were disinfected, and 68 bags of mails.

35. On steamers arriving at Port Royal 14,868 passengers were inspected and 40,829 crew.

On sailing vessels arriving at Port Royal 170 passengers were inspected and 403 crew.

36. Rules for the disinfection at the Quarantine Station of passengers' baggage, were made by the Governor in Privy Council, and will obviate any further losses on the part of passengers either imaginary or real.

37. Several prosecutions under the Quarantine Laws and Regulations were instituted with satisfactory results.

Number of ships disinfected—47.

Receipts from disinfection of ships—£313 19s. 0d.

Expenses connected with disinfection—£382 15s. 5d.

CHARLES DON,
Secretary Quarantine Board.

I have the honour to be,

Sir,

Your obedient servant,

J. ERRINGTON KER,

Suptg. Medical Officer.

The Hon. The Colonial Secretary,
Kingston.

ANNUAL REPORT ON THE WORK OF THE BACTERIOLOGICAL DEPARTMENT,

April 1st, 1914—March 31st, 1915.

Pathological Laboratory, Public Hospital, Kingston, Jamaica.

The Honourable,

The Superintending Medical Officer.

Sir,

I have the honour to report upon the work of the Pathological Laboratory during the year 1914-1915.

A perusal of the appended Table I will show that during the period under review a very large number of specimens has been dealt with. In my 1913 report it was stated that 6,194 specimens had been examined; in 1914 this number was increased to 6,697; whereas during the year just passed the total of 12,930 has been reached. Seeing that the staff has not been augmented during the year, these figures alone bear ample testimony to the high pressure at which the work is carried on, and if this is to continue an extra washer at least will be an absolute necessity. An average of over 1,000 specimens a month,

and on some occasions 100 in a single day, cannot be satisfactorily dealt with by our present staff, which is half that of some laboratories having less than half our number of specimens to examine.

The fact that since Dr. Catto's arrival as Assistant Bacteriologist we have been able to deal with almost twice the previous number is sufficient evidence, firstly, of the necessity for the appointment; secondly, of the zeal and assiduity with which he has aided me in coping with so much work; and thirdly, of the value of bacterial investigations to the general practitioners, since, for an island of this size to supply over 1,000 specimens monthly, it is clear that almost every medical man fully avails himself of the opportunities open to him to obtain help in diagnosis and confirmation of the results of treatment in obscure cases.

For the purposes of description the work may be divided into two main groups: I. Routine, II. Special Research.

Under I. *Routine Work*—

1. Widal examinations for diagnosis of Enteric Fever.
2. Blood examinations for parasites—malaria, filaria—enumerations of leucocytes, etc.
3. Examinations of excreta for helminthiasis and dysentery.
4. Examinations of pus, urines, and sputa.
5. Examination of rats.
6. Bacterial analyses of water supplies.
7. Autopsies of special cases.
8. Tissues sectioned for diagnosis, etc.
9. Miscellaneous, comprising Wassermann reactions, preparations of vaccines, analyses of gastric contents, throat cultures for the Klebs-Löffler bacillus, effusions, transudations, cystic fluids, etc.

Under II. *Special Research*—

1. Into the causes of the spread and prevalence of enteric fever in Kingston.
2. Into cases of Contagious Abortion in cattle at the Government Farm.
3. Vomiting Sickness.

I.—ROUTINE WORK.

1. *Widal examinations for enteric fever*.—A total of 1,393 specimens of blood have been examined during the twelve months for diagnosis of enteric fever (348 more than in the previous similar period). Of these 515 or 36.97 per cent. gave a positive result; 794 or 57 per cent. were negative, while 84 or 6.03 per cent. were doubtful. The last named comprise those sent up too early in the disease, when there was, perhaps, loss of motility only with little if any attempt at agglutination; under such circumstances another specimen was always asked for to be sent in two or three days' time. But even if all the doubtful cases were added to the positive the number and proportion of the latter would still be below that of the preceding year.

Table IV shows that the increase arises largely from specimens sent from Kingston (including town and hospital) and adjoining parish of St. Andrew.

Noticing this to be the case I compiled from the laboratory records the figures given in Table III, which are instructive in showing that, whereas in the months of April, July and August, the number of specimens sent from Kingston varied between 62 and 68, in May and June the number was nearly double. This, even if the percentage of positive reactions remained the same as in the other months, would mean nearly twice the actual number of cases of enteric fever, but the table shows that in June the percentage of positive cases rose to 54.12% and the actual cases (i.e., blood specimens yielding a positive result) rose from 21 in April to 40 in May and 59 in June.

A somewhat similar but less marked condition of things having occurred in 1913, I started in March of 1914 a series of investigations into the matter which revealed findings of much interest and considerable importance. These are treated in detail under Special work.

Briefly, to sum up this section of the routine work, of the 515 which reacted positively, 325 or 63.10 per cent. came from Kingston and St. Andrew, and 288 or 55.92 per cent. were from Kingston itself, a city exposed to bright sunshine all day long nearly every day of the year, and situated with a gentle slope from the upper part right down to the sea, and therefore with an ideal natural drainage. It was in the endeavour to discover the reason for such extensive prevalence of enteric fever in a town so favourably situated that the investigation referred to was undertaken.

Owing to three cases occurring amongst the Police Constables in April, an investigation was carried out for the purpose of ascertaining whether any "carriers" existed in the barrack room occupied by these men. Thirty-two specimens of blood were taken and four of them gave a positive reaction. Two of these gave a definite history of a previous attack of typhoid fever, while another constable, who stated that he had been ill with the disease in September, 1912, gave negative results and the serum from a fourth agglutinated bacillus paratyphosus A.

The excreta from all of them have been examined at intervals but with negative results as regards isolation of the b. typhosus or paratyphosus; with such serological findings it is possible, if not probable, that one or more carriers exist, but if so they are intermittent and at considerable intervals.

2. *Blood examinations for parasites, counts, etc.*—1,330 of these have been sent up, of which 936 were examined for malaria. In 89 of them the parasites were found, the Pl. Falciparum 64 times, the Pl. Vivax 18 times, and Pl. Malariae in 11, while in 6 a combination of forms occurred.

In a former report I stated that after making several blood examinations I had never yet met with a case of filariasis in a Jamaican who had not also lived elsewhere than in this island. I have only come across six cases during more than four years, and in every instance the patient had lived part of his life abroad.

Doubt has been thrown upon this remark of mine, one authority stating that, seeing that the disease occurs in neighbouring West Indian Islands, careful examination would probably result in its being found more commonly than I had supposed. Accordingly, with the co-operation of the medical officers in charge of patients in the General Hospital, I examined the blood of the in-patients at different times, both during the day and night, taking them 25 at a time, but in no instance could I discover any filaria

embryos. Any patient who showed glandular enlargement, and all who showed symptoms and signs of elephantiasis were examined, but except for three cases who had come from British Guiana I found no filariasis.

3. *Examination of fæces for Helminthiasis, Dysentery, etc.*—The latter may be readily disposed of. 178 specimens have been sent up from patients exhibiting dysenteric symptoms, and in 88 the amœba was found to be present and in one the *Trichomonas Intestinalis*.

As regards the question of Helminthiasis; in spite of treatment by Thymol carried out in the various districts there is apparently no diminution in the prevalence of ankylostomiasis generally. This may be attributed, judging by the laboratory examinations (it is only from this aspect of the question I feel entitled to speak) to one or both of two causes; either the treatment is not carried out energetically enough, or else early re-infection takes place. I think that both causes play a part, for in some districts specimens are sent again and again from the same patients with little or no change in the numbers of ankylostomes seen, while in others the fæces before treatment abound with the ova, at a second examination they are quite scarce, and at a third cannot be found at all, showing how effectual the treatment has been. Within a short time, however, it may be a matter of 3 or 4 weeks only, another specimen from the same patient is again crowded with ova, pointing to re-infection.

The actual state of things in Jamaica in general and in the various districts individually is clearly shown in the appended Tables V, VI, and VII. Table V gives the detailed findings in specimens sent up from the various districts, and shows not only the numbers found infected but also the different combinations of worms present. Table VI gives the percentage of specimens found infected in each district from which 100 or more have been sent during the year, and also the same ratio for the whole island. Table VII is instructive in showing the percentage of each variety of worm calculated on the basis of positive results, i.e. in place of percentage on the number sent it shows what the proportion of each parasite, singly and in combination, has been relative to the total found infected.

Table VI is additional to the figures given in my last report, because some who have read the previous ones have misunderstood their import. The percentage Table (corresponding to the present Table VII) has been taken to imply the degree of infection of subjects in this island, whereas it is stated that the figures are the percentages of Positive findings, and is instructive in giving the relative ratios in which the different varieties of worms are present, and not the ratios in which they were present, in all specimens sent up. In order to avoid such a misconception I have compiled Table VI which gives the latter information.

Volumes might be written on the points revealed by these tables, but the main one I would like to emphasise is the peculiar distribution of the worms in different districts. For example, in Linstead in the larger proportion of specimens all three parasites (ankylostome, ascaris and trichocephalus) are present; in Black River the ascaris is commoner than any of the others; while in Buff Bay and Port Maria districts 80.73 per cent. and 80.07 per cent. respectively of the positive findings contain ankylostome alone, and only an additional 15 per cent. and 18 per cent. respectively show combination with other worms.

Perhaps the point is more clearly brought out by comparing two places whence nearly the same number of specimens have been sent. For instance looking at the findings in Montego Bay and Port Maria, in comparing the figures, ankylostome only was found in 95 in the case of the former, but in 237 of the latter; while ascaris was only found once as the sole infection in Port Maria, and in union with others 37 times as compared with 115 at Montego Bay. I am unable to put forward any suggestion to explain this peculiarity of distribution.

4. *Examinations of specimens of pus, urines and sputa.*—Of these very little need be said. The numbers of each examined are stated in Table I. One case of Bronchomycosis occurred in a native and one case of Streptothrix in an East Indian coolie. The signs and symptoms of the latter were almost identical with those given in my previous report. Culturally, it behaved like the *St. Hominis* I of Foulerton.

5. *Examination of Rats.*—Owing to the presence of Plague in Cuba and in New Orleans a vigorous rat campaign was started in Jamaica early in the year. During the year 3,756 rats have been examined at the laboratory. Cultivations, smears, and inoculation experiments were carried out in the cases of any rats which afforded suspicion of plague, and in view of Castellani's statement that the bacilli may be present without any gross, naked-eye lesions in the animal, of several apparently normal rats also, but with uniformly negative results.

One matter in this connection is worthy of note, namely, the frequency with which the livers of these rodents contain encysted cestodes. There may be only one, but in some livers I have seen as many as 17, so that the organ appeared to consist almost entirely of coiled-up tapeworms enclosed each in a separate membrane. I have no literature here to refer to regarding the animal parasites of rats, and cannot identify these worms, therefore; possibly they are *Taenia Crassicolis*.

A brief description will not be out of place. The head shows four suckers, inarmate; a rostellum with two rows of hooklets, usually 16 in each row, but I have counted as many as 18 in a row—32 to 36 hooklets in all. The length of the worm has varied from 3 cm. up to 20 cm., terminating in each case in a swollen, pear-shaped segment, and the number of segments varies from 40 to 320 or more, which latter is the longest I have met with. In no instance have I found any indications of differentiated sexual organs. Occasionally, but very rarely, I have found a cysticercus form with invaginated head, showing the four suckers and 32 hooklets.

6 *Bacterial analyses of water supplies*—In addition to the regular monthly examinations of the Kingston water supplies, some samples of mineral waters made and sold in the town have been submitted to analysis at the request of the Acting Medical Officer of Health. In all 132 examinations have been carried out.

In June and July, 1914, owing to the comparatively large number of cases of enteric fever occurring in Kingston, the then Medical Officer of Health of the city wrote condemning strongly the water, and particularly incriminating a subsidiary source which is only used when the output from the two regular sources is insufficient. His statement and the widespread publication of them gave rise to a scare which,

though quite unfounded, served the useful purpose of causing more analyses to be undertaken, not only of the main sources of supply, but also of individual filter-beds. These were quite up to the usual potable water standards, and the Medical Officer of Health had made the mistake of overlooking the fact that the water specially attacked by him had not been supplied during the period dealt with, owing to its being a subsidiary supply and not required, the output from the usual sources being adequate for the requirements of the population.

As already stated I had started investigating the subject of the prevalence of enteric fever in Kingston and the results of these researches are dealt with in Part II of this report.

7. 495 tissues have been sent up for section as shown in Table I, many of them in connection with Vomiting Sickness cases. These and the special autopsies of which 242 have been performed, are of scientific interest only and will not be enlarged upon here.

8. Under the heading of Miscellaneous may be classed the Wassermann reaction, Rideal-Walker examinations of Disinfectants, cultivations from throat swabbings for the bacillus of Diphtheria, preparation of vaccines, and so forth.

These need not be spoken of in detail, suffice it to say that the new method of MacIntosh and Fildes has been adopted for the Wassermann reactions and has given exceedingly good results. It certainly takes longer and is more laborious, but these drawbacks are more than compensated by the increased reliability of the results.

The reports on the results of employment of vaccines prepared at this laboratory have been almost uniformly favourable.

The only other subject under this head which may be specifically mentioned is that of Diphtheria. Past records of the department tend to show that this has been almost unknown in Jamaica, but this is, I am inclined to think, due not to its absence, but to its non-recognition.

Throat-swabs were sent from one or two suspicious cases and were found to be positive; this fact aroused the attention of practitioners to the possibility of the disease being present, and they accordingly sent up swabs from contacts of these patients and from others exhibiting throat symptoms. 97 swabs have been sent and the Klebs-Löffler bacillus has been cultivated from 38 of them.

II. SPECIAL RESEARCH WORK.

1. Investigations into the question of Typhoid bacillus carriers, which have been undertaken throughout the year, have been written of in detail in a paper sent to the Annals of Tropical Medicine and Hygiene and this paper has been accepted by the committee for publication and will appear shortly. I may state briefly that the investigation consisted in the examination of the bile of every patient dying in the Public Hospital in order to ascertain by bacteriological methods whether any, and, if so, how many were bacillus carriers at the time of death. I examined in all 200 cases and made various tests which have been given in full in the paper referred to, and the results may be grouped in the following way:

- i. Number of cases exhibiting signs post-mortem of Enteric Fever from which a positive result was obtained from cultivation of the bile.

Out of the 200 cases 36 were shown at the autopsies to be suffering from enteric fever; that is to say, definite macroscopic lesions of the disease were present. In 30 of these the bacillus typhosus was isolated from the bile, and in one other whose blood during life had given a positive agglutination with b. paratyphosus A, and negative with b. typhosus, and who presented symptoms typical of enteric fever, paratyphosus A bacillus was isolated.

We may, therefore, say that from 36 cases of enteric fever the causative organism was isolated from the bile in 31, or in 86.11 per cent., although I am aware that the reckoning of a percentage with so few cases as 36 is liable to error. This number agrees practically with the figures of Forster and Kayser (quoted by Hewlett) who obtained pure cultures from the gall-bladders of 7 out of 8 cases.

- ii. Cases which showed no postmortem evidence of enteric fever, and in which no history of such was obtained, but which, nevertheless, yielded a positive result on cultivation of the bile.

This group is of the greatest importance in lending support to the suspicion on which the investigation was undertaken, namely, that unrecognised possible carriers are going about in Kingston in larger proportions than have been estimated in other countries.

As has been already stated some 3% of patients become carriers for a considerable time, but of this series of 200 autopsies there have been found six who up to the time of onset of their final illness had been going about apparently in perfect health, who gave no history of having had an attack of typhoid fever, who mixed freely with their fellows and lived in the poorer, insanitary and unsewered parts of the city.

Exclusive, therefore, of cases showing evidence of enteric fever at the autopsy, the bacillus has been isolated from the bile of six subjects:

- (a) Dying from Arsenic poisoning (suicidal).
- (b) " Multiple abscesses of the Liver.
- (c) " Pneumonia.
- (d) " Chronic Nephritis and Heart disease.
- (e) " Dysentery.
- (f) " Tuberculosis of lungs, pleuræ, and peritoneum.

If we deduct the number of those who were suffering from the disease, showing definite signs of it at the autopsy, we may state that out of 164 subjects there were six who were harbouring the organism of enteric fever.

The deductions which may be drawn from the fact of isolation of the bacillus from the gall-bladder or its contents have been dealt with fully in the paper already mentioned and also in my report to the Secretary of State, but as they are of purely scientific interest they need not be discussed here.

The above research was undertaken for the purpose of discovering, if possible, the reasons for the extensive prevalence of enteric fever in Kingston.

Naturally one's thoughts were first directed to the usually recognised sources of the spread of the disease, namely, food (including water), flies and dust.

The regular examinations of the Kingston water supplies undertaken at the laboratory have the effect of keeping the Kingston General Commissioners always on the alert to detect any evidence that the quality of any of these supplies is changing, and the fact of any additional contamination occurring would be soon discovered. It came as a matter of great surprise, therefore, when Kingston was scared by a report from their Medical Officer of Health that the water supply, and especially that auxiliary one recently installed at great expense consisted of "diluted sewage" and could by no methods be rendered fit for drinking purposes. Fortunately, it proved to be a mere canard, for the incriminated source of supply was not in use at the time, this being only a subsidiary supply pumped up when the usual sources prove inadequate for the demands of the population, which was not then the case.

Although there were undoubtedly a larger number of cases of enteric fever notified during May, June and July, than at other times of the year, and this year perhaps more than in previous years, I do not by any means think that one can infer from this that enteric fever has been actually more prevalent than at corresponding times in previous years.

It is possible, but not certain. It must be remembered that the uses of the bacteriological laboratory are now firmly established and blood is sent up from many more cases of fever now than formerly. A considerable proportion of these which would formerly have been diagnosed by the medical attendant as "malaria," "fever undefined," etc., now has to be notified as enteric and this swells the numbers.

Again, other cases of similarly doubtful fever prove on bacterial examination to be suffering from paratyphosis infection; these also by the present law are notifiable under the heading of Enteric Fever (formerly these were not required to be notified at all), causing a further increase.

These two causes together would lead to a marked increase in the number of notifications, even if the actual prevalence were no greater than in previous years.

Against the supposition of the disease in Kingston being water-borne are the following facts:

- i. The population of Kingston is estimated at 58,352 and the notifications of cases of enteric fever include all those in the general hospital which draws also from the neighbouring parish of St. Andrew, at all events the lowest and most densely populated part of it; so that the population was over 60,000 at the smallest computation.

During the month referred to there were 50 notifications, that is, less than 1 per 1,000, a large proportion in a town with every natural advantage for drainage, but a very small proportion as compared with what would occur if the infection were water-borne, since 58,352 individuals drink this water.

- ii. There were no notifications from the Penitentiary or the Asylum, although the same water is used there, and water from no other source.
- iii. The different quarters of the town, though having the same water supply, contributed very different numbers of enteric fever; thus from the N.E., N.W., S.W., and S.E., districts there were notified respectively 11, 23, 7, and 5 cases in one month, that is 34 in the northern to 12 in the southern part.

The water conveyance of infection being thus excluded, enquiries were made as to the other, more likely sources.

- i. Food, such as milk, etc., were possible sources, for, as in most tropical countries, milk is carelessly handled and the cleanliness of the vendors and their receptacles is by no means above suspicion.

Also sweets, cakes, and so forth, are sold at various dusty street corners, and up to a short time ago there was no compulsion to keep these articles of food protected from dust, flies, or the fingers of would-be purchasers, who commonly take up one article after another before deciding which is most value for their money. I know also of one case where the sweets so sold were actually being made in a hut in which an enteric patient was lying.

- ii. Flies. These are very troublesome in some parts of the city, particularly the poorer parts whence many of the enteric cases come. In these quarters they are troublesome at most seasons of the year, but the time when they become a positive pest is that of the "Mango season," from May onwards to September, and this is the time when the enteric rate goes up.

A fly census in different parts of the town, and the establishment of a correlation between this and the districts whence notifications of enteric fever come would be an interesting matter, but is more within the province of the Medical Officer of Health, than that of myself.

With his consent I would like to undertake this at some future period, if my other duties will permit.

- iii. Sewage Disposal. The water-carriage system is only laid on for the lower part of the town, the upper part, N. E., and N.W., districts are largely furnished with privy middens, dry earth, and so forth, nothing less than an open invitation to flies which freely avail themselves of the opportunity.

This also is a matter for the Medical Officer of Health, and with it I cannot interfere, but granting all the above there was still unaccounted for the source whence the flies, or the food, or the dust, obtained the organisms of the disease, and one therefore suspected

- iv. Carriers. This was a matter with which my special work was connected, but there were several difficulties in the way of obtaining material, as people in health cannot be prevailed upon (it is quite a natural objection) to send up excreta in order that one may find out whether they are typhoid carriers. Moreover, if negative, the case is by no means proven as the carrying might be intermittent.

My suspicions were that there might be, and probably were, individuals going about apparently in good health, who were unwittingly spreading the disease, and considering the facts firstly, that enteric fever is a common disease here, and that probably a certain percentage become carriers; and, secondly, that many cases are overlooked and wrongly diagnosed, I determined to make bile cultures of every patient dying in the hospital, no matter from what condition, and to see whether any of them were carrying the bacillus in their gall-bladders at the time of death.

Of course, in patients coming in with a history of enteric fever and dying from it, and in patients wrongly diagnosed but actually suffering from the disease, one would naturally expect to find the organism, but there was a third class for which I particularly wished to examine, namely those who were admitted into hospital with some illness unconnected or not suspected of being connected with enteric fever, and who, by harbouring the bacillus typhosus in their gall-bladders, had probably been acting as carriers, and who, had they chanced to recover, would have again gone about spreading the germs broadcast. These were the ones who were dangerous to the community, and if such were found to exist the fact would go far to explain the undue prevalence of typhoid fever in Kingston.

The results have already been summarised, but a brief recapitulation will not be a vain repetition as it will help to drive the points home.

1. Out of 200 consecutive autopsies, 37 showed definite signs of enteric fever.
2. Thirty-six cases had been diagnosed clinically as enteric fever, and 28 of them were confirmed as such at the autopsies.
3. Nine cases were found to have died from enteric fever which had been wrongly diagnosed or had had no definite diagnosis made at all.
4. Six cases gave no history of enteric fever and showed no typhoid lesions at the autopsy, but gave a positive result on cultivation of the bile.

Remarks.—Group 1 calls for no comment. Group 2 is only so far important in that notification of them would tend to swell the number of actual cases occurring, but on the other hand these are more than counterbalanced by those included in Group 3.

This last (group 3) is important in that, had they recovered there would have been no record of their having suffered from enteric fever; they might not unreasonably be regarded as possible carriers, and at any rate no warning would have been given to them relative to the risks they constituted in conveying the disease to their associates.

Group 4 is the most interesting and most important of all and proves the suspicion on which the investigation was undertaken, namely, that unrecognised carriers are going about Kingston in larger proportions than have been estimated in other countries.

It has been stated that 3 per cent. of patients become carriers, but, as has been mentioned above, out of this series of 200 cases there have been found six who up to the time of the onset of their final illness had been going about apparently in perfect health, *who gave no history of having had an attack of Typhoid Fever*, who mixed freely with their fellows, and lived in the poorer, badly ventilated, and unsewered parts of the city.

200 cases are sufficient to enable certain conclusions to be drawn, and if, apart from cases treated as enteric fever at the hospital and apart from cases showing signs of this disease, post-mortem, there have been among the 200 autopsies six who were harbouring the bacillus typhosus in their gall-bladders, it is not surprising that there is so much enteric fever in Kingston.

2. *Contagious abortion in Cattle.*—At the request of the Director of Agriculture I undertook some work in connection with an outbreak of abortion amongst the cattle at the Government Farm.

From the uterine exudate of one case a growth was obtained having the morphological and cultural characters of the bacillus abortus, originally isolated by Bang.

There are several ways in which infective material may be distributed to healthy animals and to other parts of a pasture, for example:—

- a. The surface drains of a byre may carry the infected uterine contents to other stalls.
- b. The material may be conveyed elsewhere by the removal of the soiled manure.
- c. By the roaming about of infective animals, and others carrying the material on their coats soiled by lying in infected discharge.
- d. By the boots and hands of attendants.
- e. By dogs carrying parts of the expelled foetus or membranes to other parts of the farm.
- f. The bull may convey the infection from one animal to another, though this probably is an infrequent method.

It must be borne in mind that infection readily occurs by way of the mouth, that is, ingestion of the virus by pasturing on grass which has been contaminated by the discharges of an infected animal. The natural inference from this fact is that in order to minimise the dangers of conveyance which are very considerable, cows which have aborted must be regarded as potential sources of infection so long as the genital discharge continues, and the important fact to keep in sight is that the discharge may intermit and continue for weeks if untreated.

If isolation, therefore, is not carried out, the sheds may be constantly reinfected, or, of the animals are turned out to graze the pastures may be similarly contaminated.

Finally, a few words as to our own work in this connection. It is generally held that the agglutination test for the purposes of diagnosis of this condition is not very reliable.

In the investigation of the cows at the Government Farm, the results have been singularly accurate. 25 specimens of blood were sent to be tested, and the examination was carried out with a 24-36 hours' culture of the bacillus in dilutions of the sera of 1-100, 1-200, and 1-500. No hint was given as regards the histories of any of the animals, whether they had shown any of the symptoms of the disease or not. Some had undoubtedly suffered from the disease, some were suspected, and some were healthy animals, and sera from the last were sent with the others as controls, but in no instance were we told which was which.

The results are given in the appended table VIII. It will be seen that 7 gave a marked agglutination in all three dilutions, 7 in low dilutions only, though 4 gave partial reactions in high dilutions also, while two gave only partial reactions, that is, there was a considerable degree of clumping in all the dilutions, but many bacteria still remained isolated; while 9 were negative. Arguing on the lines of my previously published work on the interpretation of this reaction in enteric fever, one inferred that those giving a positive in low dilution were either in an early stage and liable to abort, or more probably had aborted a considerable time previously, and the immunity conferred by that former attack was gradually passing off.

On reporting my results to the Director of Agriculture, I received a letter from him in which he states: "The results (of the tests) are truly remarkable, and I am able to confirm every reaction as undoubtedly correct from our own records and observations of the animals."

This fact is worthy of note in view of the somewhat adverse opinion which has been held elsewhere relative to the value of the agglutination test in this disease.

3. Lastly, the question of *Vomiting Sickness* comes up for discussion.

The disease has been very rife this year, and I was sent to investigate an outbreak in the Montego Bay district where it was exceptionally severe, 18 deaths being reported in two days. I visited in company with Dr. G. W. Thomson, the District Medical Officer, the parts of this district, Salt Spring, Granville, etc., where cases had occurred and were still occurring; I saw several patients, performed autopsies on those who died while I was in the locality, and obtained detailed histories of 35 cases in all.

Three of these were not cases of what is ordinarily known as true Vomiting Sickness, though a general aspect of the symptoms might confuse them with that disease. These three may be summarily disposed of. The first was a case of Acute Hæmorrhagic Pancreatitis, (it may be incidentally mentioned that the poison causing vomiting sickness appears at times to set up hæmorrhages in various organs, and the pancreas is not exempt, and thus acute hæmorrhagic pancreatitis in children may be one of the manifestations of the disease out here); the second was probably one of ordinary infantile convulsions without the usual concomitant symptoms of vomiting sickness; both of these terminated fatally. The third was a patient suffering from ordinary malaria of fairly long standing, not an acute case at all. I found the parasite (*Pl. Falciparum*) in her blood and she made a complete recovery on the usual anti-malarial lines of treatment.

I may, therefore, say that I made enquiries into 32 cases of what we now describe as vomiting sickness.

In a report to the Secretary of State I gave full details of all these cases, and also in that sent to His Excellency the Governor. Such details need not be given again here, but the importance of the subject demands a few words on the results of the investigation.

The best way of considering these cases is, I think, to group them in the following manner; the figures refer to the cases given in the full reports.

1. In 16 cases, namely, Nos. 3, 4, 5, 6, 7, 8, 9, 14, 18, 19, 20, 28, 29, 30, 31, and 32, there was a definite history of eating ackees or extracts ("soup" or "pot water" made with ackee) at the meal preceding the onset of the illness. If No. 17 be included, and there is almost sufficient evidence to warrant its inclusion in this group, there are 17 out of the 32 where there is no doubt that the attack followed closely on the ingestion of ackees or an extract from them.
2. Those cases in which there is sufficient evidence to warrant a strong probability that ackees comprised one of the constituents of the meal prior to the onset of the illness. There are 6 which would come under this head, namely. Nos. 2, 12, 13, 15, 16, and 27; or, if No. 17 be taken from group 1 and placed here, seven.
3. This contains only two cases, Nos. 10 and 11, in which there is some evidence pointing to the fact that ackees were eaten, but not sufficiently strong to warrant their inclusion under the foregoing groups.
4. Lastly, there are 7 in which no history was elicited of the eating of ackees, but it must be noted that in every instance trees bearing ripe fruit were growing in the yard in which the huts were situated; amongst the poor people it would be most unlikely that the use of a food which was ready at hand, a food of which they all appear to be fond, and which was then ripe, would be avoided, and that at a time when other articles of food are scarce, or at least, relatively expensive. The seven included under this category are Nos. 1, 21, 22, 23, 24, 25 and 26.

Briefly then we may say that in none of the 32 cases could the eating of ackees shortly before the onset of symptoms be definitely excluded; in 16 the fact was absolutely certain, in 7 more it was almost certain, in another 2, giving a total of 25, it was probable, while in the remaining 7 it was possible.

The eliciting of a history of ackee eating is not always easy, for, if the native once gets the idea that there is any suspicion of food—or other poisoning, he either becomes stolid and unable (?) to grasp the meaning of the simplest question or states something quite false with the aim of putting the questioner off the scent. Thus, in the case of No. 21, the patient was badly nourished and lived in a poor hut, but surrounded by ackee trees bearing ripe fruit, the mother stated that the child had been given "just ordinary food," and when pressed for details would only reply "yam and beef," and tried to make me believe that the family practically lived on these two articles always, and protested most vehemently that they would not think of eating any of the ackees which grew so plentifully at their very door.

Again, "salt fish" is frequently named as an article of diet in the country districts, and in towns such as Kingston "salt fish and ackee" is a favourite dish with many. In the country parts, however, "salt fish" may not be fish at all. I had some suspicions of this, because, when asked what form of salt fish they had had (where this had been named as part of the meal preceding the illness) there was

frequently no answer forthcoming. Dr. Thomson, the District Medical Officer, wrote to me on February 26th a letter from which I quote:—

“I have since learnt and I have made enquiries myself from several of the same class of people as those of Salt Spring and Granville, etc., and found that the statement is true, viz., that these people are in the habit of adding salt to the ackees and boiling it, and then add it to their food, calling it *saltfish*. In many instances when they say they had yam, banana, and *saltfish* for breakfast, the saltfish they refer to is the *salted ackee*.”

(Sgd.)

GEO. WM. THOMSON, D.M.O.
26.2.15.

People generally in this island are convinced that ackees under certain conditions are poisonous; among these conditions may be mentioned:

- i. Unopened ackees, and by consequence
- ii. Ackees which have not opened naturally, but have been forced after falling unopened.
- iii. Fruit gathered from a decayed branch.
- iv. Ackees with some soft spot in an otherwise apparently sound fruit.

Now, among the better classes the ackees are gathered carefully one by one, and none are cooked but such as appear ripe and sound in every respect. Among the poorer people, on the other hand, as exemplified in the districts of Salt Spring, Granville, etc., a boy is sent up the tree to shake the branches; ripe fruit and some unopened, unripe ones fall together; the former are collected while the latter are left on the ground. These in time open and may then be gathered with the new ripe ackees which fall at the next shaking. Apparently an ackee which has opened in the natural way on the tree and then is allowed to become over-ripe or even decayed, is not poisonous (so I am informed, I have not had an opportunity of proving the statement), but an unripe, unopened fruit which becomes “forced” open the adult native is suspicious of.

Children, naturally, would not make this distinction; hence the great incidence among those of tender age.

Some apparently ripe and wholesome ackees have a soft spot in the otherwise firm, fleshy part of the fruit; whether this is due to primary microbial development, or whether it arises from bruising when shaken from the tree, I cannot say, but the fact remains that, if this is noticed, the ackee in question is not used for food. I personally do not think that the latter explanation—bruising on falling—is the true one, because, as already stated, a ripe ackee which is allowed to decay is not believed to be poisonous, and experiments so far support this.

Next, from a careful consideration of the histories of the Montego Bay cases, the poison is apparently extracted by boiling the affected fruit with water. Nos. 3 and 4, 8 and 9, 12, 13 and 14, 19 and 32 support this. The bananas, pumpkin, yam and ackee are boiled up together; the parents eat the ackees, while the children partake of the rest of the food, the older ones having more of the solid parts which naturally have absorbed some of the water, and the younger children are given the “soup” or “pot-water.” The degrees of toxicity are varied in such cases, as in the series of the Johnson-Clark family (Nos. 3-7) where the adults who ate the ackees were slightly affected, having attacks of vomiting but recovering, the older child taking the solid part of the residue with, of course, absorbed watery extract, and dying after 34 hours, the younger child, who mainly had the “soup” died in 19 hours; while one member showed a return of symptoms on again partaking of a similar diet. Another series of four in one family is also instructive. Two undoubtedly were given ackee or ackee-water (pot-water), the other two had probably eaten some. Those who were known to have had the “soup” or “pot-water” died; while the others suffered from vomiting but were not seriously ill and soon recovered.

A third series of three is also highly significant; the common meal consisted of yam, bananas, pumpkin and ackee cooked up together, the ackees were picked out and eaten by the mother, the more solid residue by the older child, while the “pot-water” was given to the younger.

The graded acuteness of the illnesses in these is noteworthy. The parent who ate the solid ackee was ill for 36 hours or so, but had only gastro-intestinal symptoms; the older child who had some of the other ingredients with (probably) some of the absorbed “pot-water” was ill for about 16 hours and then died; the younger who had the “pot-water” only was acutely ill and died in about 2 hours.

No. 32, a case of a young child under 3 years of age, who had only “pot-water” is another example of the toxicity of the extract, death taking place in 4-5 hours.

Undoubtedly a certain degree of suspicion attaches to the use of the “pot-water” as an article of diet, for, if the family is small and the food sufficient, this water is thrown away before the meal is taken, or the ackees are boiled separately and the fruit taken out and mixed with the other ingredients—yam, bananas, pumpkin, etc.,—while the water is cast aside.

Whatever the nature of the toxin it seems to be rendered inert, partially or completely, by stimulants in some cases; those patients who were seen in quite an early stage, the initial vomiting period, which, as I have previously reported, is in my opinion gastric in origin, have the best chance of recovery, the stimulant—rum, ether, ammonia, etc.—being followed by recovery as in cases 5, 11 and 26.

On the other hand, when secondary vomiting has made its appearance, which I believe to be cerebral, owing to its character differing from the former in being effortless and being followed almost at once by convulsions and coma, such stimulation seems to have no beneficial effects at all.

However mild a case seems to be, and however good the general condition, I have never yet seen recovery take place in “vomiting sickness” if convulsions occur, or if consciousness is once lost, and I have notes now of nearly 300 cases.

The points I have noted previously may be briefly recapitulated in this connection:

- a. That, in view of the sudden onset in apparently perfect health, without any prodromata, and the absence of any bacterial findings in a typical case under favourable circumstances, the weight of evidence is against the disease being due to a bacteræmia.

- b. That the rapidity of progress of symptoms with early fatal termination, or in rarer instances, an equally rapid and complete recovery, without deleterious after-effects, rather indicates the action of a poison.
- c. That, in view of the early symptoms being gastric and the cerebral succeeding soon after, this poison probably acts first upon, and is then absorbed from, the stomach; the gastric and duodenal congestion present tend to support this.
- d. That, since chemical tests of the stomach contents (which in former years have been repeatedly tried by the Island Chemist) have revealed none of the usual poisons, and no signs of alkaloids, the poison (if such it be) is one which rapidly leaves the stomach or is rapidly decomposed.
- e. That it rapidly spreads over the whole body, as is evidenced by the hæmorrhages and other changes which may be present in almost every organ and tissue.
- f. That it produces its effects, apart from the clinical symptoms arising from cerebral causes, in the main upon the liver, as evidenced by the extensive fatty changes set up in that organ.

These are the points to which I drew attention last year and to them may be added the fact that the vomiting sickness outbreaks correspond in respect of time with the main ackee season; that is, the end of November to the middle of March, or in favourable years to the end of that month or even the first part of April.

So extensive an outbreak as that above recorded in the Montego Bay district is sufficient to make out a strong case inculcating the ackee, since so large a number of patients being attacked in such rapid sequence with toxic symptoms, giving almost identical histories as regards the question of diet, cannot be ascribed to mere coincidence.

In conclusion I beg to add that no one is better aware than myself that the chain of evidence is not complete without confirmation by means of animal experiment. This will be the next step in the investigation; I have in fact started upon this aspect of the question, but it is a difficult matter to obtain "suspected" ackees, the season being just over.

One small, but nevertheless, important point may be mentioned now, and that is that I prepared an extract ("potwater") exactly in accordance with the methods detailed by boiling with water. A small quantity of this, after being filtered, was administered intra-gastrically to a kitten previously in perfect health. Within 40 minutes it began to show signs of being affected, vomiting ensuing with recovery in 2—3 hours. A second dose a little larger (the two together would nearly be equivalent to the extract from one ackee) was similarly administered the following day, when vomiting again came on after about the same interval accompanied by a comatose condition which terminated fatally the same day.

The autopsy showed a pale condition of the liver and intense congestion of the meningeal and cerebral vessels, just as one sees in human vomiting sickness. The tissues show a close similarity as regards the histological changes, but the examination of these is not yet completed. Steps to confirm these findings will of course be undertaken.

I have the honour to be,

Sir,

Your obedient servant,

H. HAROLD SCOTT, M.D., London, D.P.H.,

Government Bacteriologist.

TABLE I.—Showing the numbers of specimens examined month by month, 1914-1915.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Widals ..	101	168	167	109	124	115	130	121	126	86	75	71	1,393
Faeces for Helminthiasis ..	140	297	266	291	199	259	300	296	338	328	299	321	3,334
Faeces for Dysentery ..	11	46	25	9	8	8	18	26	26	20	10	18	225
Blood Smears ..	156	164	148	76	69	78	101	79	130	114	120	95	1,330
Pus ..	15	20	11	13	6	6	6	6	10	10	11	10	124
Urines ..	16	65	31	52	19	18	11	21	22	17	15	17	304
Sputa ..	28	42	27	35	33	29	25	32	33	30	21	28	363
Tissues ..	59	37	13	66	11	16	45	121	20	16	52	39	495
Waters ..	10	9	12	9	12	11	14	14	9	7	14	11	132
Autopsies ..	22	35	14	20	13	11	11	20	21	23	25	27	242
Rats ..	120	505	665	494	327	276	296	339	263	131	204	136	3,756
Miscellaneous ..	82	133	76	59	47	88	70	65	140	165	160	147	1,232
Totals ..	760	1,521	1,455	1,233	868	915	1,027	1,140	1,138	947	1,006	920	12,930

TABLE II.—Numbers of Sera examined by Widal's test for Enteric Fever month by month, with results, 1914-1915.

Month.	Total.	Positive.	Negative.	Doubtful.
April ..	101	34	57	10
May ..	168	60	104	4
June ..	167	89	73	5
July ..	109	39	60	10
August ..	124	42	69	13
September ..	115	38	70	7
October ..	130	42	80	8
November ..	121	44	69	8
December ..	126	33	85	8
January ..	86	31	51	4
February ..	75	29	43	3
March ..	71	34	33	4
Totals ..	1,393	515	794	84

TABLE III.—Examinations of Sera sent up from Kingston, with percentage results month by month and for the whole period, 1914-1915.

Month.		Total.	Positive.	Negative.	Doubtful.
April	..	68	30.88	57.36	11.76
May	..	119	33.61	63.03	3.36
June	..	109	54.12	43.13	2.75
July	..	63	30.64	64.52	4.84
August	..	65	30.77	55.39	13.84
September	..	69	30.43	63.77	5.80
October	..	71	30.98	66.19	2.83
November	..	71	35.21	59.15	5.64
December	..	73	27.39	64.39	8.22
January	..	49	30.61	65.31	4.08
February	..	37	29.73	62.16	8.11
March	..	40	37.50	52.50	10.00
Whole period	..	833	34.58	59.19	6.23

TABLE IV.—Districts from which blood has been sent for diagnosis of Enteric Fever, with results, 1914-15.

District.	No.	Positive.	Negative.	Doubtful.
Kingston	833	288	493	52
St. Andrew	101	37	54	10
Port Antonio	80	21	53	6
Buff Bay	57	20	34	3
Mandeville	46	30	14	2
Montego Bay	36	14	21	1
Plantain Garden River	31	14	16	1
Spanish Town	29	20	7	2
Lucea	27	11	16	—
Lionel Town	25	12	11	2
Linstead	24	12	11	1
Annotto Bay	17	4	13	—
St. Ann's Bay	17	6	10	1
Morant Bay	12	4	6	2
Port Maria	11	6	5	—
Richmond	8	3	5	—
Chapelton	7	5	2	—
Brown's Town	4	3	1	—
Manchioneal	4	4	—	—
Old Harbour	4	1	3	—
Alexandria	3	—	3	—
Grange Hill	3	1	1	1
Malvern	3	1	2	—
May Pen	3	1	2	—
Sav.-la-Mar	3	—	3	—
Gayle	2	—	2	—
Black River	1	—	1	—
Newport	1	—	1	—
Ulster Spring	1	1	—	—
Totals	1,393	519	790	84
Percentages	..	37.26	56.71	6.03

TABLE V.—Details of Helminthiasis in specimens sent from various districts, 1914-1915.

District.	No.	Negative.	Anky. alone.	Ascaris alone.	Tricho. alone.	All three.	Anky. and Asc.	Anky. and Tricho.	Asc. and Tricho.
Black River ..	259	55	37	31	23	34	9	21	30
Annotto Bay ..	34	1	22	..	..	..	28	2	..
Buff Bay ..	467	57	331	9	6	15	32	14	3
Chapelton ..	192	16	41	16	17	42	23	24	13
Falmouth ..	178	18	22	11	18	44	13	18	34
Kingston and Hospital ..	181	50	34	8	19	17	16	29	8
Linstead ..	242	10	28	6	17	98	31	37	15
Lionel Town ..	374	124	119	23	13	23	29	18	25
Mandeville ..	208	16	28	14	8	64	39	25	14
Montego Bay ..	309	55	95	12	19	54	36	25	13
Plantain Garden River ..	115	31	58	2	2	5	6	11	..
Port Maria ..	319	23	237	2	2	6	28	20	1
St. Ann's Bay ..	187	13	12	10	13	74	17	26	22
St. Ann's Poor House ..	102	8	15	6	11	26	18	10	8
Lucea ..	41	1	7	..	3	12	2	15	1
St. Mary's Poor House ..	39	..	7	1	..	10	6	12	3
Others ..	87	11	18	7	4	19	12	11	5
Totals ..	3,334	489	1,111	158	175	543	345	318	195

TABLE VI.—Showing the number of specimens containing ova of worms and the relative proportions in those districts from which 100 or more have been sent, and the numbers for the whole Island.

District.	No.	Positive.	Anky. alone.	Anky. and in combination.	Ascaris alone.	Ascaris and in combination.	Tricho. alone.	Tricho and in combination.
Black River ..	259	78.76	14.28	46.33	11.96	47.49	8.88	41.69
Buff Bay ..	467	87.79	70.87	83.91	1.92	12.63	1.28	8.13
Chapelton ..	192	91.66	21.35	67.71	8.33	48.96	8.85	50.50
Falmouth ..	178	89.88	12.36	64.49	6.18	57.30	10.11	64.04
Kingston and Hospital ..	181	72.37	18.78	53.04	4.42	27.07	10.49	40.33
Linstead ..	242	95.86	11.57	80.16	2.48	61.98	7.02	69.01
Lionel Town ..	374	66.84	31.81	50.53	6.15	53.47	3.47	21.12
Mandeville ..	208	92.30	13.46	75.00	6.73	62.98	3.84	53.36
Montego Bay ..	309	82.20	30.76	67.96	3.88	37.21	6.15	35.92
Plantain Garden River ..	115	73.04	50.43	69.56	1.74	11.30	1.74	15.65
Port Maria ..	319	92.79	74.29	91.22	0.62	11.59	0.62	9.09
St. Ann's Bay ..	187	93.04	6.41	68.94	5.34	65.77	6.95	72.19
St. Ann's Poor House ..	102	92.15	14.70	67.64	5.88	56.86	10.78	53.92
Whole Island ..	3,334	85.33	33.32	69.49	4.74	37.22	5.25	36.92

TABLE VII.—Showing the relative proportions in which worms were present in cases of Helminthiasis in the various districts.

District.	No.	Positive.	Anky. alone.	Anky. and in combination.	Ascaris alone.	Ascaris alone and in combination.	Tricho. alone.	Tricho. alone and in combination.
Black River ..	259	204	18.13	58.82	15.19	60.29	11.27	52.94
Buff Bay ..	467	410	80.73	95.61	2.19	14.39	1.46	9.27
Chapelton ..	192	176	23.35	73.86	9.09	53.41	9.66	54.54
Falmouth ..	178	160	13.75	60.62	6.88	63.75	11.25	71.25
Kingston and Hospital ..	181	131	25.95	73.28	6.10	37.40	14.50	55.72
Linstead ..	242	232	12.07	83.62	2.58	64.65	7.33	71.98
Lionel Town ..	374	250	47.60	75.60	9.20	80.00	5.20	31.60
Mandeville ..	208	192	14.58	81.25	7.29	68.22	4.16	57.82
Montego Bay ..	309	254	37.40	82.67	4.72	45.27	7.48	43.70
Plantain Garden River ..	115	84	69.04	95.24	2.38	15.47	2.38	21.43
Port Maria ..	319	296	80.07	98.31	0.67	12.50	0.67	9.76
St. Ann's Bay ..	187	174	6.89	74.13	5.74	70.69	7.47	77.59
St. Ann's Poor House ..	102	94	15.95	73.40	6.38	61.70	11.70	58.51
Whole Island ..	3,334	2,845	39.05	81.44	5.55	43.61	6.11	43.27

TABLE VIII.—Results of Agglutination Tests of Sera of Cattle with Bang's *Bacillus abortus*.

± implies agglutination but incomplete. Several bacteria remaining isolated. See page 49.

Name of Animal.	Dilution. 1:100	Dilution. 1:200	Dilution. 1:500
1. "Blossom" ..	+	+	—
2. "Rosa" ..	±	±	±
3. "Lydia" ..	+	—	—
4. "Dainty" ..	+	+	+
5. "Brownie" ..	—	—	—
6. "Duchess" ..	—	—	—
7. "Grey" ..	—	—	—
8. "Brisk" ..	+	+	+
9. "Pretty" ..	—	—	—
10. "Butterfly" ..	+	—	—
11. "Gena" ..	+	±	—
12. "Pansy" ..	—	—	—
13. "Gloria" ..	—	—	—
14. "Bee" ..	+	±	±
15. "Honeybelle" ..	+	+	+
16. "Sophie" ..	+	+	+
17. "Janetstein" ..	+	+	+
18. "Priceless" ..	—	—	—
19. "Timora" ..	+	+	+
20. "Queen of Diamonds" ..	—	—	—
21. "Sunshine" ..	+	+	+
22. "Ethel" ..	±	—	—
23. "Abdullah" ..	—	—	—
24. "Pear" ..	+	+	±
25. "Betty" ..	+	+	±

TABLE IX.

No.	Initials.	Sex.	Age in years.	Enteric Fever.			Diagnosis.		Bile Culture.	
				Suspected.	Found post-mortem.	Widal.	Clinical.	Found post-mortem.	Typhosus.	Others.
1	R. C.	F.	8	Yes	Yes	+	Enteric Fever	Enteric Fever	+	—
2	E. C.	M	54	No	No	..	Fractured ribs	Also ruptured liver and spleen	—	—
3	A. G.	M.	38	No.	No	..	Sarcoma, left kidney	Double cystic kidney (L. 5,610. R 2250 grms.)	—	—
4	M. H.	F	21	No	Yes	—	Pneumonia, left	Typhoid ulcers	+	—
5	A. T.	M	27	No	Yes	..	Pneumonia	Typhoid ulcers, very numerous; 5 in appendix	+	—
6	L. A.	F.	40	No	No	—	Enteritis	Tuberculosis, lung, spleen, intestine	—	—
7	C. C.	M	48	No	No	..	Arsenical poisoning (suicidal)	Irritant poisoning, 431 grs Ars. acid	+	—
8	J. F.	M	31	No	No	..	None made	Pulmonary tuberculosis	—	—
9	O. W.	M	?	No	Yes	..	Pneumonia	Typhoid ulcers, old pleuritic adhesions	+	Coli
10	R. S.	M	22	No	Yes	..	Genl. Peritonitis	Peritonitis from typhoid perforation	+	Coli
11	A. M.	F	25	No	No	..	Phthisis	Tuberculosis, lungs and spleen	—	Sterptoeocci
12	C. F.	M	41	No	No	..	None made	Colitis	—	—
13	A. F.	M	43	No	No	..	Dysentery	Large Int. gangrenous, mitral vegetations, renal infarcts	—	Shiga type
14	I. S.	F	28	No	No	..	Mitral regurgn.	Mitral disease	—	—
15	Z. S.	M	51	No	No	..	Liver abscess	Confirmed	—	Coli
16	A. G.	F	19	Yes	Yes	—too early	Enteric Fever	"	+	—
17	E. W.	F	25	No	No	..	Phthisis	"	—	—
18	S. D.	F	25	No	No	..	None made	Tuberculosis left lung, small intest.	—	—
19	L. B.	F	25	No	No	—	Phthisis	Empyema, left, Fibrino-purulent Pericarditis	—	—
20	E. N.	F	22	No	No	..	Not made	Mitral disease	—	—
21	R. C.	M	?	No	No	..	Chr. Nephritis	Confirmed	—	—
22	E. P.	F	21	Yes	Yes	+	Enteric Fever	"	+	—
23	L. G.	M	34	Yes	Yes	+	Enteric Fever	"	+	—
24	A. W.	M	53	No	No	..	Ch. Nephritis	"	—	—
25	G. M.	F	7/12	No	No	..	Congl. Syphilis	"	—	—
26	J. M.	M	30	No	No	—	Subtertian Malaria	"	—	—
27	P. M.	M	49	No	No	..	Urethral stricture	Chr. Nephritis, Rt. Lobar Pneumonia	—	—
28	M. H.	F	40	No	No	..	None made	Mitral Incompet.	—	—
29	M. McC	F	?	No	No	..	Nephritis and Cardiac	Confirmed	—	—
30	E. R.	F	19	Yes	Yes	+	Enteric Fever	"	+	—
31	V. D.	M	12	No	No	..	Vomiting sickness	Tubercular enteritis and Peritonitis	—	Coli
32	E. J.	M	19	Yes	No	—	None made	Phthisis	—	—
33	M. M.	F	24	Yes	Yes	+	Enteric Fever	Confirmed	—	—
34	B	F	21	No	No	..	Phthisis	Liver abscesses, gall-stone ulcerated into duodenum	+	—
35	K. C.	F	20	Yes	Yes	+	Enteric Fever	Confirmed	+	—
36	J. S.	M	21	No	No	..	Pernicious anæmia	Gangrenous appendicitis	—	—
37	A. B.	F	46	No	No	..	Lipoma left groin	Richter's Hernia strangulation	—	—
38	V. C.	M	20	Yes	Yes	+	Enteric Fever	Confirmed	—	Coli
39	A. S.	F	29	No	No	..	Pneumonia	Tuberculosis Bronchopneumonia	—	—
40	G. T.	M	33	No	No	..	Extravasation of Urine	Confirmed	—	Coli
41	E. G.	F	12	Yes	No	+	Enteric Fever	Bronchopneumonia ? Typhoid	—	—
42	F. R.	M	40	No	No	..	Epithelioma of Penis	Confirmed	—	—
43	M. B.	F	4	Yes	Yes	Indefinite	Enteric Fever	"	+	—
44	D. S.	M	16	Yes	old pigmented	+	Enteric Fever	Tuberculosis pleura Pericardium and Bronchial glands	—	—
45	R. J.	M	23	Yes	Yes	+	Entec Fever	Confirmed	+	—
46	A. J.	F	5	No	No	—	Meningitis	Abscess of lung. Pyo pneumothorax	—	Streptococci

TABLE IX., *contd.*

No.	Initials.	Sex.	Age in years.	Enteric Fever.			Diagnosis.		Bile Culture.	
				Suspected.	Found post-mortem.	Widal.	Clinical.	Found post-mortem.	Typhosus.	Others.
47	J. J.	M	40	No	No	..	Phthisis	Confirmed	—	—
48	A. F.	F	20	Yes	Yes	+	Enteric Fever	"	—	Parat A
49	A. McM.	M	7	No	No	..	Tuberculosis of lungs	"	—	—
50	V. H.	F	15	Yes	Yes	+	Enteric Fever	"	+	—
51	C. G.	M	46	No	No	..	Stricture and Chr. Nephritis	Confirmed	—	Coli and streptococcus
52	A. T.	M	14	No	No	..	Dysentery	Confirmed (amœbic)	—	Streptococci
53	S. H.	F	42	No	No	..	Carcinoma, Uterus	"	—	—
54	F. P.	M	60	No	No	..	Cystitis	With enlarged prostate	—	—
55	A. F.	F	24	Yes	No	—	Enteritis	Pathisis and Ankylos-tomiasis	—	—
56	J. M.	F	17	Yes	Yes	—	Not made	Typhoid ulcers, early stage	+	—
57	M. B.	F	16	No	No	—	Double Pneumonia	Rt. Pyosalpinx, Septicæmia, embolic pulmonary abscesses	—	—
58	N. N.	F	41	No	No	..	Sarcoma upper jaw	Confirmed	—	—
59	J. S.	M	?	No	No	..	Uræmia	Confirmed contracted granular kidney	—	—
60	J. W.	M.	20	Yes	Yes	+	Enteric Fever	Confirmed	+	—
61	A. D.	F	15	No	No	..	Not made	Tuberculosis lungs and intestine	—	—
62	L. G.	M	23 $\frac{3}{4}$	No	No	..	Enteritis	Confirmed	—	Sactisaerog
63	D. S.	F	30	No	No	..	Intestinal obstruction	Band from old appendicitis	—	—
64	J. B.	M	10	Yes	Yes	+	Enteric Fever	Confirmed	—	Coli only
65	J. D.	M	64	No	No	..	Cellulitis of hand	" also Mitral disease	—	—
66	T. C.	M	24	No	No	..	Acute Pneumonia	Confirmed	—	Coli
67	R. T.	F	11	Yes	Yes	+	Enteric Fever	"	+	—
68	R. T.	F	19	Yes	Yes	..	"	"	—	—
69	E. T.	F	21	Yes	No	—	Not made	Genl. Tuberculosis, lungs, Peritoneum, Pleura, liver intest.	—	Streptococci
70	E. B.	F	22	No	No	..	Puerperal Septicæmia	Confirmed	—	Streptococci and Coli
71	A. McN	M	22	Yea	Yes	+	Enteric Fever	"	+	—
72	S. Y.	M	40	No	No	—	Arsenic poisoning (suicide)	"	—	—
73	S. D.	M	19	No	No	—	Lobar Pneumonia	"	+	—
74	A. C.	F	30	Yes	No	—	Not made	Colitis ? Dysenteric	—	Coli
75	Not known	M	?	No	No	..	"	Cerebral Hæmorrhage	—	—
76	J. B.	M	40	No	No	..	Pneumonia	Confirmed	—	—
77	J. S.	F	19	No	No	..	Mitral disease and Phthisis	"	—	—
78	L. S.	F	50	No	No	—	Not made	Malignant endocarditis embolic pyæmia	—	—
79	J. R.	M	30	No	No	—	"	Tuberculosis, lung and serous membranes	—	—
80	M. W.	F	19	Yes	No	—	"	Tuberculosis, lobar Pneumonia	—	—
81	F. J.	F	23	No	No	..	Pyæmia	Confirmed	—	Streptococci
82	J. J.	F	17	Yes	No	—	Not made	Large pale kidney ? Uræmia	—	—
83	W. A.	M	48	No	No	..	"	Phthisis	—	—
84	W. S.	M	19	Yes	No	?	Enteric Fever	Phthisis	—	Coli
85	J. P.	M	? 25	No	No	—	Not made	Glioma, rt. Hemisphere	—	—
86	A. R.	F	38	Yes	No	—	? Enteric Fever	Cirrhosis of liver, Ch. Int. Nephritis	—	Coli
87	E. B.	M	72	No	No	..	Gangrene, leg	Confirmed	—	—
88	J. B. L.	M	35	No	Yes	..	Cerebral Hæmorrhage	Enteric Fever	+	—
89	M. L.	F	38	No	No	..	Fibroid Uterus	Also Phthisis and old plural effusia, left	—	—
90	T. W.	M	52	No	No	..	Cerebral Hæmorrhage	Cerebellar Tumour	—	—
91	A. McG.	F	62	No	No	..	Maligt. disease	Carcinoma of Uterus and Peritoneum	—	—
92	P. S.	F	42	No	No	..	Intestinal obstruction	Volvulus	—	Coli
93	C. E.	F	? 22	No	No	..	Peritonitis	Confirmed, perforation of maligt. growth of jejunum	—	Morgan
94	D. D.	M	20	Yes	No	—	Enteric Fever	Dysentery	—	—
95	T. M.	F	26	No	No	..	Not made	Fibroids and early pregnant uterus (death from Hæmorrhage)	—	Coli

TABLE IX., *contd.*

No.	Initials.	Sex.	Age in years.	Enteric Fever.			Diagnosis.		Bile Culture.	
				Suspected.	Found post-mortem.	Widal.	Clinical.	Found post-mortem.	Typhosus.	Others.
96	C. V.	M	27	No	No	..	Genl. Peritonitis	Confirmed; perforated duodenal ulcer	—	—
97	H. W.	F	37	No	No	..	Pleural effusion	Maligt. growth the lung and pleura	—	—
98	S. H.	M	2	No	Yes	..	Not made	Enteric Fever	+	—
99	A. G.	F	19	No	Yes	..	Pneumonia	Confirmed, but also Enteric Fever	+	—
100	J. B.	F	19	No	No	..	Cerebral Malaria	Tuberculosis lungs and Bronchial glands	—	—
101	E. L.	F	19	No	No	..	Drowning	Confirmed	—	—
102	E. D.	M	16	Yes	No	—	? Dysentery	Ulcerat. Colitis	—	—
103	M. B.	F	12	No	No	..	Not made (moribund)	Dysentery	—	—
104	J. D.	M	25	No	No	..	Phthisis	Confirmed	—	Coli
105	C. R.	M	20	Yes	Yes	+	Enteric Fever	"	+	—
106	Cl. R.	M	22	Yes	No	—	"	Empyema	—	—
107	G. S.	F	17	Yes	Yes	+	"	Confirmed	+	—
108	W. B.	M	? 60	No	No	..	Fractured skull	Intraventric Hemorrhage	—	—
109	H. W.	F	21	No	No	..	Not made	Vlc. Colitis ? Dysentery	—	—
110	E. H.	M	36	No	No	..	Phthisis and Pericarditis	Lobar Pneumonia	—	—
111	T. D.	M	31	No	No	..	Asthma	Aortic aneurism	—	—
112	C. B.	M	39	No	No	..	Morbus Cordis	Aortic and mitral	—	—
113	E. R.	F	31	No	No	..	Chr. Nephritis	Confirmed	+	—
114	D. M.	M	38	No	No	..	Amoebic dysent.	"	—	Lact. aerog.
115	J. M.	M	75	No	No	..	Epilepsy and Phthisis	Chr. Nephritis (no tubercle)	—	Coli
116	P. W.	F	28	No	No	..	Mitral disease	Confirmed	—	—
117	C. F.	M	13	No	No	..	Pneumonia	Empyema and Pul. abscess	—	Lact. aerog.
118	S. H.	F	25	Yes	Yes	+	Enteric Fever	Confirmed	+	—
119	F. D.	M	13	No	No	..	Paraplegia	Myelitis (traumatic)	—	—
120	R. S.	F	26	No	No	..	Mitral regurg.	Confirmed	—	—
121	J. H.	M	44	No.	No	..	Cancer of Stomach	Pyloric care.	—	—
122	J. H.	M	22	No	No	..	Not made (moribund)	Syphilis	—	Lact. aerog.
123	R. G.	M	56	No	No	..	Empyema	Abscess of liver	—	—
124	E. D.	F	? 65	No	No	..	Senile decay	Confirmed	—	—
125	W. N.	M	41	Yes	No	—	? Enteric	Lobar Pneumonia	—	—
126	J. W.	M	72	No	No	..	Tetanus after burns	Confirmed	—	—
127	M. T.	F	64	No	No	..	Dysentery	"	—	—
128	C. C.	M	17	Yes	Yes	+	Dysentery after Enteric	"	+	—
129	M. H.	F	13	Yes	Yes	+	Enteric Fever	"	+	—
130	E. S.	F	51	No	No	..	Carc. of Uterus	Noma of Vagina	—	Pyrcyaneus
131	C. R.	F	35	No	No	..	Pellagra	Confirmed	—	—
132	J. E.	M	22	No	No	..	Hæmatenesis	Aneurysm of descending Aorta	—	—
133	R. S.	M	58	No	No	..	Phthisis	Confirmed (and Empyema)	—	Streptococcus
134	J. B.	M	22	No	No	..	Bullet wound of head (suicidal)	Fracture of skull	—	—
135	E. W.	F	26	No	No	..	Not made (moribund)	Cirrhosis of liver, thr. Nephritis	—	—
136	J. R.	M	? 35	No	No	..	Carc. Stomach	Carc. liver and pancreas	—	Coli
137	H. D.	F	24	No	?	..	Dysentery	Confirmed	+	—
138	B. H.	M	43	Yes	No	—	Not made	Pyelitis and Cystitis	—	Coli
139	J. B.	F	? 26	No	No	..	Dysentery	Cirrhosis of liver Chr. Int. Nephritis	—	—
140	V. W.	F	21	No	No	..	Not made (paralysis)	Malig. growth of Peritoneum and secondary of spine	—	Lact. and aerog.
141	E. H.	F	? 50	No	No	..	Peritonitis	Confirmed, due to suppurated ovarian cyst	—	Coli
142	C. M.	M	43	No	No	..	Dysentery	Cirrhosis liver and chr. Nephritis	—	—
143	M. B.	F	28	No	No	..	Morbus Cordis	Aortic and mitral	—	Lact. aerog.
144	O. C.	M	9	Yes	Yes	+	Enteric Fever	Confirmed	+	—
145	D. C.	F	18	Yes	Yes	+	"	"	+	—
146	E. B.	M	36	No	No	..	Not made	Empyema	—	—
147	T. H.	M	27	No	No	..	Lobar Pneumonia	Confirmed	—	—
148	B. R.	F	24	No	No	..	Ludwig's angina	"	—	—
149	R. B.	M	42	Yes	No	—	Appendicitis	Vlc. Colitis	—	—
150	S. S.	M	46	No	No	..	Chr. Dyspepsia	Abscess of lung, Empyema	—	Lact. aerog.

TABLE IX., *contd.*

No.	Initials.	Sex.	Age in years.	Enteric Fever.			Diagnosis.		Bile Culture.	
				Suspected.	Found post-mortem.	Widal.	Clinical	Found post-mortem.	Typhosus.	Others
151	R. B.	M	15	Yes	No	—	Enteric Fever and Malaria	Malaria, spleen, liver &c.	—	—
152	D. K.	M.	?	No	No	..	Epilepsy	Gumma of cavdate nucleus	—	—
153	J. P.	M	? 43	No	No	—	Not made	Ruptured aneurysm, celiac axis	—	Coli
154	I. F.	F	17	No	No	..	Broncho pneumonia	Phthisis	—	—
155	W. J.	M	60	No	No	..	Mitral regurg.	Tuberc. Peritonitis (Heart normal)	—	—
156	M. L.	F	23	No	No	..	Bullet wound abdomen (accident)	Genl. Peritonitis, 10 perforations	—	—
157	A. T.	F	45	No	No	..	Not made	Pneumonia	—	—
158	E. E.	F	24	No	No	..	Amœbic dysent.	Confirmed	—	Coli
159	C. S.	F	27	No	No	..	Morbus Cordis	Tubercle of lungs, pleura and peritoneum	+	—
160	S. A.	M	31	No	No	..	Ac. alcohol poisoning (2 pts. rum)	Double pneumonia followed	+	—
161	E. L.	F	47	No	No	..	Morbus Cordis	Mitral stenosis	—	—
162	H. D.	M	27	No	No	..	Phthisis	Confirmed	—	—
163	W. McK	M	40	No	No	..	Nephritis	"	—	Coli
164	W. H.	M	22	No	No	..	Not made	Double Pneumonia	—	—
165	A. N.	M	38	No	No	..	Mitral disease	Aortic (no mitral)	—	Coli and strept.
166	L. K.	M	32	No	Yes	+	Colitis	Enteric Fever	+	—
167	O. H.	F	45	No	No	..	Not made	Ch. Int. Nephritis	—	—
168	E. T.	M	50	No	No	..	Mitral disease	Lobar Pneumonia (no valvular affection)	—	—
169	A. H.	M	70	No	No	..	Chr. Int. Nephritis	Confirmed	—	—
170	J. W.	M.	24	No	No	..	Pneumonia	Purulent Pericarditis, empyema	—	—
171	W. B.	M	20	No	No	..	Ac. Pneumonia	Post basic Meningitis	—	Streptococci
172	S. K.	M.	26	No	No	..	Septicæmia from Ludwig's angina	Confirmed	—	—
173	J. C.	M	19	Yes	No	..	Enteric Fever	Tuber. Enteritis and Peritonitis	—	—
174	J. D.	M	48	No	No	..	Phthisis	Confirmed	—	—
175	A. L.	F	26	No	No	..	Eclampsia	Confirmed, renal disease	—	—
176	B. McF.	F	26	Yes	Yes	+	Enteric Fever	Confirmed	+	—
177	H. H.	F	16	No	No	..	Tetanus	"	—	—
178	J. W.	M	18	No	No	..	Vesical calculus	Peritonitis, post operative	—	Coli
179	E. J.	F	18	No	No	..	Not made	Phthisis	—	—
180	A. B.	F	24	Yes	Yes	+	Enteric Fever	Confirmed	—	—
181	E. P.	F	56	No	No	..	Mal. Endocarditis	"	—	—
182	U. R.	M	35	No	No	..	Lobar Pneumonia	"	—	—
183	D. D.	M	39	No	No	..	Morbus Cordis	"	—	—
184	W. G.	M	78	No	No	..	Chr. Cystitis and enlarged prostate	"	—	Coli
185	W. M.	M	72	No	No	..	Not made	Empyema and abscess of lung	—	—
186	J. E.	M	39	No	No	..	Not made	Genl. Peritonitis from perforation of carc. of pylorus	—	—
187	J. R.	M	75	No	No	..	Not made	Cerebral Hæmorrhage. occip. lobe (syphilis)	—	—
188	A. B.	M	26	No	No	..	Run over by dray	Fractured steruma and rib, tearing of right lung	—	—
189	E. R.	F	4	No	No	..	Knocked down by motor	Rupture of liver	—	—
190	L. McF.	F	? 40	No	No	..	Not made	Pellagra	—	Morgan
191	C. P.	F	9	No	No	..	Dysentery	Confirmed	—	—
192	M. W.	F	35	No	No	..	Peritonitis	Ruptured tubal gestation	—	—
193	A. H.	F	48	No	No	..	Strangulated Ing. Hernia	Confirmed	—	—
194	C. B.	M	31	No	No	..	Not made	Ruptured aortic aneurysm	—	—
195	V. T.	M	54	No	No	..	Amœbic dysentery	Confirmed	—	—
196	M. K.	M	70	No	No	..	Chr. stricture	Pyelorephistis and contr. granular kidneys	—	Coli
197	G. W.	M	33	No	No	..	Not made	Tuberc. of lungs	—	—
198	I. D.	F	18	No	No	..	"	Genl. Peritonitis	—	Lact. aerog.
199	C. B.	F	7	No	No	..	Septicæmia	Confirmed	—	—
200	I. P.	F	17	Yes	Yes	+	Enteric Fever	"	+	—

Post-mortem findings and results of Bile cultivation from 200 consecutive autopsies, in connection with research into the prevalence of Enteric Fever in Kingston.

PUBLIC HOSPITAL.

Report for the year ended 31st March, 1915.

Public Hospital, Kingston, June 29th, 1915.

Sir,

I have the honour to place before you the Annual Report of the Medical and Surgical cases treated in this Institution during the year ending March 31st, 1915.

TABLE I

Shows the number of patients treated in Hospital during the year under review with results. The total number being 3,123, of this number 192 were left remaining in Hospital at the close of the year.

There were 361 deaths during the year under review.

The daily number of beds occupied was 217.

The number of applicants who applied for admission to Hospital, but who were rejected for want of accommodation or for other reasons was 4,743 as compared with 5,228 in the previous year. All the cases rejected were treated, and if considered necessary, were admitted subsequently to Hospital and were referred to the Inspector of Poor.

TABLE II

Gives the average stay of patients in Hospital.

TABLE III

Gives the number of deaths occurring within 12, 24, 48 and 72 hours after admission. These cases were admitted in practically a moribund condition and little or nothing could be done for them. The total number of deaths under this heading was 132. The total death-rate for the year was 12.09%.

TABLE IV

Gives the number of medical cases treated during the year with results. The most noteworthy were:

Malarial Fever.—The number of cases treated during the year was 182 with 6 deaths as compared with 145 cases treated in the previous year with 5 deaths.

Tubercle.—Under this heading 97 cases were treated during the period under review, 24 cases terminated fatally. During the previous year 57 cases were treated of that number 23 cases died.

Enteric Fever.—During the year under review 216 cases were admitted to Hospital, out of this number 58 cases terminated fatally, the majority of the fatal cases were admitted in a very critical condition—indeed little or nothing could be done for them.

Venereal Diseases.—The subjoined table shows the number of cases under treatment during the year in Hospital.

	Cases.	Deaths.
Syphilis Primary	6	—
do Secondary	—	—
do Tertiary	37	3
Gonorrhœa & Sequela	151	12
Chancroids	39	—
Congenital Syphilis	9	7

Dysentery (Amœbic).—During the year under review 56 cases were admitted for treatment of this number 18 cases ended fatally. Hypodermic injections of Emetine $\frac{1}{2}$ of a grain twice a day proved most efficacious, indeed in some severe cases the treatment acted like magic.

Colitis.—There were 34 cases admitted for treatment of this number 11 cases terminated fatally. In the previous year 91 cases were treated, of this number 20 terminated fatally.

Acute Enteritis.—Under this heading 103 cases were admitted for treatment, 26 cases terminated fatally.

TABLE V

Gives the number of major and minor operations performed during the year under review, the total being 1,289 with 37 deaths.

TABLES VI, VII, VIII

Give returns of countries and parishes and occupations of patients admitted to Hospital during the year under review.

TABLE IX.

Shows the number of prescriptions dispensed for the Outpatients, the Constabulary and the Maternity Hospital.

The number of casualties treated during the year was 8,251, the number of out-patient dressings done in the Outpatient Department was 22,667.

The Matron has held regular classes for senior and junior nurses. Three examinations have been held and the results on the whole have been fairly satisfactory. During the period under review 11 nurses qualified and received certificates—5 of this number have remained on the staff of the Institution, 4 were appointed Matrons to country Hospitals and 2 left to take up private nursing.

The thanks of the Hospital are due to the many kind friends who have presented Illustrated papers, magazines, etc., to the wards.

I have, etc.,

C. W. M. CASTLE,
Senior Medical Officer.

The Hon. Suptg. Medical Officer.

The Dental Laboratory, Public Hospital, Kingston,
18th April, 1915.

Sir,

I have the honour to submit hereby my report on the working of the Laboratory for the financial year just completed.

During the year I attended 103 days for the approved number of hours each day and as was forecasted in my last year's report the figures under the principal headings have shewn a considerable increase. For the purpose of comparison I attach the subjoined table:—

	1913-14.	1914-15.
Cases	1,276	1,966
Extractions	1,504	2,539
Treatments	185	107
Fillings	24	20
Necroses	8	6
Lancing gums	—	28
Mouth washes	—	80
Removal of nerves	—	7
Cleanings	3	6
Splints	—	2
Refused to be treated	—	12

Although extractions, as must be expected represent the large amount of more than 2,500 this extensive "destruction" is seasoned with a good deal of conservative dental surgery.

A notable instance is afforded in the case of a youth who falling from a tree, landed squarely on his face, resulting in a fracture of the frontal portion of his lower maxillary bone. On his arrival at the Laboratory it was found that the fractured process along with his central incisors and canines had been stoved inwards to an angle of almost 90 degrees and was occupying the sublingual space. Appositeness of the bones was restored and a special splint of my own make was adjusted to keep the fracture in situ; after some weeks of treatment the case resulted in a splendid recovery with no disfigurement whatever, all the teeth being saved with the pericementum of each intact.

The addresses given by the applicants in all cases are in Kingston or Lower St. Andrew but investigations have satisfied me that a large number hail from more distant parishes. Becoming aware of the existence of this Department residents in the country parishes arrange to "kill two birds with one stone" when coming up to Kingston on business by patronizing the Laboratory whilst also transacting the primary business of their visits to the city. Realizing however that the bureau is maintained from the general revenues of the Colony I have kept my eyes only on the class of inhabitants who apply and not on the localities from which the subjects come.

I obtained 6 weeks leave during the year and in my absence the work was satisfactorily carried on by Dr. E. C. Melville my partner in private practice.

No expenditure for "services" was incurred as all the material for carrying on the work which the resources of the Hospital could not provide was supplied by myself without any charge, but in view of the hold that this department has taken on the public the Government may perhaps find it necessary to make a larger appropriation to meet its growing demands as soon as better times arrive.

It cannot but afford me some little satisfaction that of the large number of cases handled in no instance was complaint made of any disregard to the feelings of the applicants or a want of attention to their complaints, particularly when it is taken into account that here like everywhere else, the patrons of any system of relief which is supported from Government funds are always ready to remind those who administer that system that they are "Taxpayers," thereby implying that they are entitled to receive the best of everything that is available.

I desire to record my appreciation of the never varying courtesy and affability which since my appointment to this office have been extended to me by the Medical Officers, by Mr. Gordon, the officer in charge of the Dispensary; and by the general staff of the Institution.

I have, etc.,

S. C. DePASS,

Surgeon Dentist to the Public Hospital, Kingston.

The Chief Medical Officer and Director.

TABLE I.

	Males.	Females.	Total.
Patients remaining in hospital April 1st 1914	123	97	220
Patients admitted during year 1914-1915	1,558	1,345	2,903
Total patients treated	1,681	1,442	3,123
Of these were cured ..	1,167	954	2,121
Of these were relieved ..	143	144	287
Of these were not relieved ..	75	87	162
Of these died	192	169	361
Remaining in hospital March 31st 1915	104	88	192
	1,681	1,442	3,123

Death Rate 12.09%

TABLE II.

Daily average number of beds occupied by male patients	..	116
Daily average number of beds occupied by female patients	..	91
Average stay in days of those who died—males	..	13
Average stay in days of those who died—females	..	14.18
Average stay in days of males discharged	..	26.1
Average stay in days of females discharged	..	26
Average stay in days of those males remaining at the end of year	..	33.4
Average stay in days of females remaining at the end of year	..	27.6
Longest stay of any one patient in hospital	..	232

TABLE III:

Patients who have died within the following hours after admission:—

				Hours.				
				12	24	48	72	Total.
				—	—	—	—	—
Males	..	..	11	18	17	19	65	
Females	..	..	13	21	19	14	67	
				—	—	—	—	—
				24	39	36	33	132
				—	—	—	—	—

TABLE IV.—Public Hospital, Kingston—Model

DISEASES.	April.		May.		June.		July.		August.		September.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Enteric Fever	27	12	34	8	38	10	14	3	19	2	15	3
Dysentery .. ..	..	..	1	..	3	1	2	2	3	1	5	4
Pneumonia	7	2	7	4	1	1	1	1	7	3	3	1
Influenza	1	..	..	..	..	..	..	..	1	..	1	..
Malarial Fever—												
(a) Tertian .. ..	..	..	..	..	..	..	..	..	1	..	1	..
(b) Sub-tertian	5	1	11	..	20	1	15	..	17	2	25	1
(c) Quartan .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	1	..	..	..	..	..	1	1	1	..	..	..
Pellagra .. ..	..	..	..	..	1	..	..	..	..	..	1	..
Erysipelas .. ..	..	..	..	..	..	..	..	..	1	..	..	..
Septicæmia .. ..	..	..	1	1	..	..	..	..	3	1	1	..
Pulmonary Tuberculosis	4	1	11	3	13	4	9	1	17	1	9	3
Syphilis—												
Primary .. ..	..	..	..	..	1	..	2	..	..	..	1	..
Secondary .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Tertiary .. ..	..	..	2	..	11	2	5	..	4	..	3	..
Congenital .. ..	..	..	5	4	..	..	..	..	1	..	2	2
Gonorrhœa and Sequela	15	4	15	..	18	1	10	1	14	..	13	..
Chancroids	1	..	3	..	2	..	7	..	4	..	2	..
Alcoholism	2	..	..	..	..	..	..	..	..	..	..	..
Rheumatism	4	..	4	..	4	..	1	..	..	..	1	..
New Growth—												
(a) Malignant	9	2	3	..	6	..	2	..	6	3	5	..
(b) Non-Malignant	3	..	5	2	1	..	2	1	4	1	8	..
Anæmia	1	..	1	..	..	..	..	..	..	..	1	..
Debility	1	..	2	..	..	..	1	..	..	..	..	..
Appendicitis	2	..	1	..	2	1	2	..	2	..	1	..
Whooping Cough .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Beri-Beri	1	..	1	..	1	..	..	..	..	..	..	..
Measles .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken Pox .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria .. ..	..	..	..	..	..	..	..	..	..	..	1	..
Mumps .. ..	..	..	..	..	..	..	..	..	..	..	..	..
	84	22	107	22	122	21	74	10	105	14	99	14
LOCAL DISEASES—												
Nervous System—												
Brain and Apoplexy	1	1	..	..	..	..	2	2	..	..	1	..
Nerves	3	..	3	..	5	..	3	1	2	..	..	..
Spinal Cord .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Epilepsy	2	1	1	..	1	..	..	..	..	..	..	..
Paralysis	4	1	..	..	..	..	3	1	1	1	1	..
Hysteria	1	..	2	1	..	..	..	..	..	..	..	..
MENTAL DISEASES—												
Mania .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Dementia .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Melancholia .. ..	..	..	..	..	..	..	..	..	..	..	..	..
DISEASE OF—												
Eye	9	..	3	..	7	..	11	..	3	..	7	..
Ear .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Nose	2	..	1	..	1	..	..	..	..	..	1	..
Circulatory System	7	3	5	..	5	1	8	1	8	4	10	2
Respiratory system	11	1	9	1	11	2	7	..	12	1	6	2
Digestive system	26	7	34	6	26	4	22	3	27	7	36	8
Lymphatic system	6	..	5	..	5	..	7	..	..	..	6	..
Minary system	14	2	6	2	2	1	4	3	5	..	4	..
Generative System—												
Male organ	2	1	1	..	6	..	4	..	7	..	3	..
Female organ	17	..	10	..	10	..	10	..	14	1	6	..
Cellular tissue	6	..	8	1	8	..	15	..	20	..	15	..
Skin	10	..	8	..	6	..	16	1	9	..	13	..
Bones and joints	7	..	5	..	10	..	9	1	6	..	3	..
	128	17	101	11	103	8	121	13	114	14	112	12
Local injuries	21	1	16	..	18	1	35	2	19	1	20	1
Malformation .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Poisons .. ..	..	..	1	1	..	..	..	..	1	..	..	..
Parasites .. ..	..	..	..	..	3	..	4	..	1	..	3	..
No Disease	2	..	..	..	2	..	2	..	1	..	1	..
	23	1	17	1	23	1	41	2	22	1	24	1

Report—Nosological Return, 1914-1915.

October.		November.		December.		January.		February.		March.		Total.		Remaining.
Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
20	7	17	3	15	4	9	2	5	1	3	3	216	58	19
5	1	12	1	9	4	9	1	5	3	2	1	56	18	2
4	2	7	3	9	3	13	5	5	2	1	1	65	28	1
2	..	2	..	2	..	13	..	4	..	2	..	28	..	..
..	..	..	..	..	..	..	..	..	..	..	..	2	..	..
19	..	19	..	21	..	10	1	11	..	7	..	180	6	8
..
1	1	..	..	..	..	1	..	1	1	..	..	6	3	..
1	..	3	1	..	..	..	..	..	..	2	..	8	1	1
..	..	..	..	1	..	..	..	..	..	..	..	2	..	..
..	..	..	..	2	1	2	1	3	1	2	..	14	5	2
7	1	12	1	5	1	3	3	4	2	3	3	97	24	4
..	..	..	..	2	..	..	..	..	..	..	..	6	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
2	..	1	..	5	..	2	..	2	1	..	..	37	3	4
..	..	..	..	1	1	..	..	..	..	..	..	9	7	..
14	1	16	3	9	..	6	..	17	2	4	..	151	12	14
4	..	5	..	2	..	4	..	4	..	1	..	39	..	6
..	..	1	..	3	..	..	..	1	..	1	..	8	..	..
8	..	4	..	4	..	4	..	3	..	2	..	39	..	1
..
3	..	1	1	4	3	7	..	2	..	3	1	51	9	8
6	..	3	1	8	..	1	..	1	..	..	..	42	5	2
4	..	..	..	..	..	5	..	5	..	..	..	17	..	2
1	..	..	..	2	..	..	..	..	..	..	..	7	..	..
3	..	1	..	..	..	2	..	..	..	1	..	17	1	1
1	..	..	..	..	..	..	..	..	..	..	..	1	..	..
..	..	..	..	2	..	1	..	..	..	..	..	6	..	..
..	..	1	..	..	..	..	..	..	..	1	..	1	..	1
..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
..	..	..	..	..	..	..	..	..	..	1	..	1	..	..
..	..	..	..	..	..	..	..	..	..	1	..	1	..	..
105	13	105	13	106	17	92	13	73	13	36	9	1,109	181	77
..	..	..	..	..	..	1	1	1	1	..	..	6	5	..
3	..	1	..	4	..	4	..	2	..	1	..	31	1	3
..
2	1	1	..	1	..	1	..	1	..	..	..	10	2	2
5	1	4	2	1	..	1	..	3	..	..	..	23	6	1
..	..	..	..	..	..	..	..	1	..	..	..	4	1	..
..
..	..	..	..	..	..	..	..	1	..	1	..	2	..	..
..
5	..	4	..	..	..	2	..	3	..	..	..	54	..	6
..
..	..	1	..	..	..	..	..	1	..	1	..	8	..	..
7	5	5	2	7	4	5	1	5	2	12	4	84	29	3
10	1	8	..	5	..	9	..	8	3	4	..	100	11	8
48	12	44	7	42	9	28	4	19	3	25	8	377	78	19
8	..	4	..	2	..	2	..	3	..	1	..	49	..	9
7	3	4	..	13	4	9	3	6	3	1	1	75	22	2
..
4	..	5	..	2	..	4	..	5	..	1	..	44	1	3
10	..	10	..	8	..	9	..	16	1	6	..	126	2	8
17	2	11	..	6	1	5	1	6	..	3	..	120	5	16
21	..	4	..	15	..	15	..	5	..	1	..	123	1	8
8	..	7	..	4	..	1	..	7	..	2	..	69	1	12
155	25	113	11	110	18	96	10	93	13	59	13	1,305	165	100
27	1	13	1	24	2	19	1	10	1	5	2	227	14	12
..	..	..	..	1	..	1	..	1	..	..	..	3	..	..
..	..	..	..	1	..	..	..	..	..	..	..	3	1	..
3	..	2	..	5	..	2	..	6	..	2	..	31	..	1
7	..	5	..	5	..	2	..	3	..	3	..	33	..	2
37	1	20	1	36	2	24	1	20	1	10	2	297	15	15

TABLE V.—Model Report—Nosological

DISEASES.	April.		May.		June.		July.		August.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Abscesses—Incisions of	2	..	7	..	3	..	6	..	4	..
Abdominal Section for—										
Intestinal obstruction	1	1	1	1	2	2	1	1	2	..
Appendectomy	2	..	..	..	1	..	2	..	2	..
Ovariotomy .. .. .	..	..	2	..	..	..	..	..	..	..
Oophorectomy (Double) .. .. .	..	..	..	..	1	..	..	..	..	..
Hysterectomy	1	..	1	1	2	1	1	1	2	1
Gastro-jejunostomy .. .. .	..	..	1	1	..	..	..	..	..	..
Pyo-Salphynx .. .. .	..	..	..	..	1	..	..	..	..	..
Exploratory Laparotomy .. .. .	..	..	..	..	1	1	1	..	2	2
Ventral Fixation of Uterus	1	..	..	..	..	..	..	..	..	..
Amputations—										
Leg .. .. .	..	..	1	..	..	..	..	..	..	..
Hand .. .. .	..	..	1	..	..	..	..	..	..	..
Breast	2	1	..	..	..	..	1	..	..	..
Penis .. .. .	..	..	1	..	..	..	..	..	..	..
Finger .. .. .	..	..	2	..	..	..	1	..	1	..
Toe .. .. .	..	..	..	..	..	..	..	..	1	..
Bones—										
Necrosis	1	..	..	..	..	..	..	..	1	..
Sequestrotomy	1	..	..	..	1	..	..	..	1	..
Bladder and Urethra—										
Dilatation of Stricture	1	1	1	..	2	..	5	..	1	1
Perineal Section	4	3	..	..	1	1	1	..	..	..
Suprapubic cystotomy (for stone) .. .. .	..	..	..	..	..	..	..	..	..	..
Prostatectomy (Freyer's) .. .. .	..	..	..	..	..	..	..	..	..	..
Eye, on—										
Enucleation of eyeball	2	..	2	..	1	..	2	..	..	..
Extraction of Cataract with Iridectomy	2	..	1	..	..	..	..	..	..	..
Extraction of Cataract without Iridectomy	1	..	..	..	1	..	..	..	..	..
Needling Cataract .. .. .	..	..	..	..	..	..	..	..	..	..
Face, Nose and Mouth—										
Nasal Polypus .. .. .	..	..	..	..	1	..	..	..	..	..
Epithelioma lip .. .. .	..	..	..	..	..	..	..	..	..	..
Enlarged Turbinals .. .. .	..	..	..	..	..	..	..	..	..	..
Tonsils .. .. .	..	..	..	..	..	..	1	..	..	..
Adenoids	2	..	4	..	1	..	1	..	..	..
Glands—Removal of—										
Inguinal	3	..	4	..	4	..	4	..	3	..
Cervical	3	..	2	..	..	..	1	..	..	..
Axillary .. .. .	..	..	..	..	..	..	..	..	..	..
Scraping of—										
Femoral .. .. .	..	..	1	..	..	..	..	..	..	..
Inguinal .. .. .	..	..	..	..	1	..	..	..	1	..
Cervical .. .. .	..	..	..	..	..	..	..	..	..	..
Hernia—										
Radical cure for	2	2	1	..	3	..	..	..	1	..
Herniotomy for strangulated Hernia .. .. .	..	..	..	..	..	..	1	..	..	..
Male Generative Organs—										
Radical cure for Hydrocele	1	1	..	..	..	..	1	..	3	..
Radical cure for Varicocele	1	..	..	..	..	..	..	..	..	..
Circumcision	3	..	6	..	5	..	7	..	5	..
Cauterizing Chancroids	1	..	..	..	..	..	1	..	1	..
Slitting up Prepuce .. .. .	..	..	..	..	..	..	..	..	..	..
Female Generative Organs—										
Curetting	8	1	13	..	3	..	8	..	7	..
Trachelorrhaphy .. .. .	..	..	..	..	..	..	..	..	..	..
Perineorrhaphy .. .. .	..	..	..	..	..	..	..	..	1	..
Vesico-Vaginal Fistula .. .. .	..	..	..	..	..	..	..	..	..	..
Recto-Vaginal Fistula .. .. .	..	..	..	..	..	..	..	..	2	..
Uterine Polypus .. .. .	..	..	..	..	..	..	..	..	..	..
Rectum and Anus—										
Dilating Rectal Stricture .. .. .	..	..	..	..	1	..	..	..	..	..
Hæmorrhoids	3	..	..	..	4	..	1	..	2	..
Fistula in Ano .. .. .	..	..	..	..	3	..	..	..	..	..
Removal of Toenails	1	..	1	..	1	..	1	..	5	..
Trephining for Compound depressed fracture of skull .. .. .	..	..	..	..	..	..	..	..	1	..

Return, Operations, 1914-1915.

September.		October.		November.		December.		January.		February.		March.		Total.	
Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
5	..	5	..	11	..	4	..	6	..	6	1	6	1	65	2
1	8	5
..	1	..	2	1	1	1	1	1	..	..	12	3
..	1	..	..	..	..	..	3	..
..	..	1	..	2	..	2	..	1	..	..	..	..	..	1	..
..	13	4
1	1	..	..	..	..	..	1	..	..	..	1	1
..	1	..	..	..	..	..	..	..	3	3
..	6	..
..	1	..
2	2	..	1	..	..	..	..	..	1	..	7	..
..	1	..	1	..	..	..	..	..	..	..	3	..
..	2	..	1	..	1	..	7	1
2	..	1	..	1	..	1	..	..	..	..	..	..	..	1	..
..	1	..	..	..	..	..	..	..	..	..	9	..
..	2	..
2	..	1	..	..	..	1	..	..	..	1	..	..	..	5	..
..	1	..	2	..	..	..	1	..	..	..	9	..
5	..	3	..	3	..	4	..	..	..	7	..	3	1	35	3
2	..	1	1	1	1	1	..	1	..	..	..	..	..	12	6
..	1	..	..	..	..	..	1	1	..	..	1	1
..	1	..	..	..	..	..	..	..	..	..	1	..
1	..	1	..	..	..	..	..	..	..	2	..	1	..	12	..
1	1	..	..	..	..	..	..	..	..	..	5	..
1	1	..	..	..	..	..	..	..	1	..	4	..
..	1	..	..	..	..	..	..	..	1	..	3	..
1	2	..
..	1	..	..	..	..	..	1	..
..	1	..
2	1	..
2	1	..	..	..	1	..	..	..	..	..	2	..
..	1	..	1	..
2	1	..
1	1	..	..	..	..	..	2	..	1	..	13	..
4	..	2	..	2	1	..	..	5	..	7	..	3	..	41	1
..	1	..	2	..	2	..	2	..	1	..	14	..
..	..	3	..	..	..	..	..	..	..	..	..	1	..	4	..
..	1	..
..	1	..	..	..	..	..	..	..	1	..
..	2	..
2	..	1	..	2	..	2	1	1	..	1	..	4	1	20	4
..	..	1	..	..	..	1	..	..	..	..	..	..	..	3	..
2	1	..	..	..	1	..	..	..	..	..	9	1
..	1	..
5	..	2	..	5	..	5	..	6	..	9	..	6	..	64	..
2	1	..	..	..	..	..	6	..
..	1	..	1	..
8	..	8	..	4	..	7	..	4	..	9	..	5	..	84	1
..	..	1	..	1	..	..	..	..	..	..	..	..	..	2	..
..	1	..
..	1	..	..	..	1	..
1	1	..	2	..
..	1	..	..	..	..	..	1	..	4	..
..
2	..	1	..	3	..	2	..	1	..	3	..	1	..	2	..
..	3	..
4	..	3	..	2	..	2	..	5	..	2	..	1	..	28	..
..	1	..

TABLE V.—Model Report—Nosological

DISEASES.				April.		May.		June.		July.		August.	
				Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Tumours and Cysts—													
Pre-patella bursa	..	..	..	..	..	1	..	..	..	..	..	1	..
Sebaceous cyst	..	..	..	..	..	..	..	..	..	..	..	1	..
Meibomian cyst	..	..	..	..	..	..	..	..	..	..	..	1	..
Lipoma	..	..	..	1	..	..	..	1	..	..	..	..	..
Fibroma	..	..	..	..	..	1	..	..	..	..	..	..	..
Cystic tumour	..	..	..	..	..	..	..	1	..	..	..	..	..
Ganglion	..	..	..	..	..	1	..	..	..	..	..	..	..
Miscellaneous—													
Examination	..	..	..	..	..	..	..	..	..	3	..	2	..
Scraping chronic ulcers	..	..	..	..	..	3	..	..	..	..	..	2	..
Scraping sinuses	..	..	..	1	..	2	..	..	..	..	..	1	..
Ligaturing varicose veins	..	..	..	..	..	..	..	..	..	..	..	..	..
Babcocks operation for varicose veins	..	..	..	..	..	..	..	1	..	..	..	..	..
Excision of Carbuncle	..	..	..	..	..	..	..	..	..	..	..	..	..
Erasion of knee-joint	..	..	..	..	..	..	..	..	..	..	..	..	..
Extraction of bullet	..	..	..	..	..	..	..	..	..	1	..	1	..
Removal of warts	..	..	..	..	..	1	..	1	..	..	..	..	..
Reducing dislocations	..	..	..	..	..	1	..	..	..	..	..	..	..
Setting fractures	..	..	..	..	..	..	..	..	..	..	..	1	..
Exploratory incisions	..	..	..	..	..	1	..	..	..	..	..	..	..
Operation for reducing club foot	..	..	..	..	..	..	..	..	..	..	..	..	..
Plastic operation—													
Operation for Dupuytren's contraction..	..	..	..	..	..	..	..	..	..	..	..	..	..
Minor operations performed without chloroform—													
Incisions of abscesses	..	..	..	16	..	31	..	41	..	47	..	37	..
Removal of foreign bodies	..	..	..	9	..	1	..	9	..	11	..	13	..
Dilatation of stricture	..	..	..	2	..	4	..	5	..	5	..	4	..
Tapping Hydrocele	..	..	..	1	..	2	..	5	..	3	..	3	..
Removal of Tonsils	..	..	..	..	..	1	..	..	..	..	..	2	..
Reducing dislocations	..	..	..	..	..	..	..	1	..	2	..	..	..
Setting fractures	..	..	..	..	..	..	..	2	..	..	..	..	..
Removal of Pterygium	..	..	..	..	..	..	..	..	..	..	..	..	..
Dilating Lachrymal canaliculi	..	..	..	1	..	..	..	..	..	..	..	..	..
Total				80	10	103	3	111	5	120	2	118	4

Return, Operations, 1914-1915.

September.		October.		November.		December.		January.		February.		March.		Total.	
Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
..	..	1	..	..	..	..	..	..	..	1	..	1	..	4	..
..	2	..
..	1	..	..	..	1	..	..	..	1	..
..	..	1	..	..	..	..	..	2	..	1	..	1	..	4	..
..	1	..	..	..	..	..	6	..
..	2	..
..	1	..
1	..	1	..	1	..	4	..	3	..	1	..	..	..	16	..
2	..	1	..	..	..	1	..	2	..	1	..	..	..	12	..
..	..	2	..	..	..	1	..	..	..	1	..	..	..	8	..
..	1	..	..	..	..	..	1	..
1	1	..	..	..	2	..
1	1	..	..	..	..	1	..	..	..	..	..	..	..	1	1
..	2	..
..	2	..
..	1	..
..	..	1	..	..	..	..	..	..	..	..	..	..	..	2	..
..	1	..	..	..	..	..	..	..	2	..
..	1	..	..	..	..	..	1	..
..	1	..	..	..	..	..	..	..
..	1	..	..	..	..	..	1	..
..	1	..	..	..	..	..	..	..
47	..	48	..	27	..	19	..	29	..	24	..	26	..	392	..
4	..	6	..	6	..	3	..	11	..	4	..	8	..	85	..
7	..	5	..	9	..	3	..	10	..	7	..	5	..	66	..
4	..	5	..	2	..	..	..	2	..	..	..	2	..	29	..
10	..	7	..	2	..	2	..	4	..	..	..	..	..	23	..
7	..	3	..	2	..	2	..	..	..	..	..	..	..	17	..
6	..	1	..	2	..	2	..	1	..	8	..	7	..	29	..
1	..	1	..	..	..	..	..	..	..	..	..	..	..	2	..
..	1	..
148	1	118	1	102	2	83	2	108	1	107	3	91	3	1,289	37

TABLE VI.—COUNTRIES.

America	..	..	5
Austria	..	..	1
Barbadoes	..	..	3
Belgium	..	..	1
Canada	..	..	2
China	..	..	16
Columbia	..	..	2
Colon	..	..	1
Cuba	..	..	1
Dominica	..	..	1
England	..	..	19
France	..	..	1
Germany	..	..	7
Grand Cayman	..	..	3
Holland	..	..	1
Inagua	..	..	1
India	..	..	50
Ireland	..	..	5
Jamaica	..	..	2,756
Nassau	..	..	1
Norway	..	..	4
Nova Scotia	..	..	1
Peru	..	..	1
Scotland	..	..	4
St. Lucia	..	..	1
St. Kitts	..	..	3
Switzerland	..	..	1
Sweden	..	..	2
Syria	..	..	2
Trinidad	..	..	3
Venezuela	..	..	1
Wales	..	..	3
Total	..	..	2,903

TABLE VII.—PARISHES.

Kingston	..	..	1,975
St. Andrew	..	..	774
Port Royal	..	..	8
Portland	..	..	7
St. Mary	..	..	27
St. Ann	..	..	2
Trelawny	..	..	2
St. James	..	..	1
Hanover	..	..	1
Westmoreland	..	..	4
St. Elizabeth	..	..	5
Manchester	..	..	3
Clarendon	..	..	5
St. Catherine	..	..	28
St. Thomas	..	..	17
Foreign	..	..	44
Total	..	..	2,903

TABLE VIII.—OCCUPATIONS.

Accountants	..	..	3
Apiarists	..	..	3
Apprentices	..	..	16
Architects	..	..	1
Artists	..	..	2
Bailiffs	..	..	1
Bakers	..	..	20
Billiardmarkers	..	..	1
Blacksmith	..	..	5
Boatmen	..	..	2
Boatswain	..	..	1
Bookkeepers	..	..	2
Brakesmen	..	..	3
Bricklayers	..	..	15
Busmen	..	..	6
Butchers	..	..	8
Butlers	..	..	29
Cabinetmakers	..	..	2
Cakesellers	..	..	10

Carpenters	..	..	45
Cartmen	..	..	20
Chaffeurs	..	..	5
Chemist	..	..	1
Cigarmakers	..	..	11
Clerks	..	..	31
Coachmen	..	..	18
Compositors	..	..	3
Conductors	..	..	7
Cooks	..	..	49
Coopers	..	..	5
Constables	..	..	229
Dentists	..	..	1
Draymen	..	..	7
Electricians	..	..	5
Enginedrivers	..	..	2
Engineers	..	..	4
Firemen	..	..	32
Fishermen	..	..	25
Fitters	..	..	6
Gardeners	..	..	51
Goldsmiths	..	..	5
Grooms	..	..	18
Hatmakers	..	..	11
Headmen	..	..	2
Higglers	..	..	85
Housecleaners	..	..	1
Inspectors	..	..	1
Jockeys	..	..	4
Journalists	..	..	1
Labourers	..	..	389
Lamplighter	..	..	1
Laundresses	..	..	298
Machinists	..	..	3
Masons	..	..	5
Mechanics	..	..	3
Messengers	..	..	6
Motormen	..	..	4
Musicians	..	..	1
None	..	..	677
Nurses	..	..	55
Overseers	..	..	1
Painters	..	..	9
Planters	..	..	81
Peddlers	..	..	10
Photographers	..	..	1
Plumbers	..	..	2
Physicians	..	..	1
Porters	..	..	6
Postmen	..	..	4
Postmistresses	..	..	2
Potters	..	..	1
Printers	..	..	2
Saddlers	..	..	3
Sawyers	..	..	1
Seamen	..	..	23
Seamstresses	..	..	125
Schoolmasters	..	..	13
Servants	..	..	264
Shoemakers	..	..	21
Shopkeepers	..	..	15
Shopservers	..	..	12
Stewards	..	..	3
Stevedores	..	..	2
Storemen	..	..	10
Tailors	..	..	20
Tobacconists	..	..	4
Typists	..	..	1
Upholsterers	..	..	4
Warders	..	..	1
Watchmen	..	..	2
Wharfingers	..	..	1
Wheelwright	..	..	1

Total .. 2,903

1914-15.

TABLE IX

No. of patients treated under tickets from Insp. of Poor	756
“ “ prescriptions made up for above	7,556
“ “ Casualties treated without tickets	8,251
“ “ prescriptions made up for above	8,589
“ “ Minor operations performed in surgery	295
“ “ prescriptions made up for Constabulary	1,507
“ “ Out-patients' dressings applied	22,667

Financial Return of the Public Hospital for the five years ended 31st March, 1911, 1912, 1913, 1914, 1915.

Year.	Average daily number of Beds.	Gross Expenditure.	Receipts.	Net expenditure after deducting receipts.	Number of patients admitted.	Average annual cost per bed calculated on the gross expenditure.	Average daily cost per bed calculated on the gross expenditure.	Average annual cost per bed calculated on the net expenditure.	Average daily cost per bed calculated on the net expenditure.	Cost of maintenance alone per bed per diem.
		£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.
1910-11	193	9,016 14 10	337 9 11	8,679 4 1	3,172	46 14 4½	0 2 6½	44 19 4¾	0 2 5½	0 10½
1911-12	217	9,796 2 3	487 5 3	9,308 17 0	2,132	44 6 0	0 2 5	42 1 0	0 2 2¼	0 10¼
1912-13	223	10,540 4 6	702 16 1	9,837 8 5	3,199	46 4 3½	0 2 6¼	43 1 3¼	0 2 4¼	0 10¼
1913-14	217	10,692 2 2	741 17 7	9,850 4 7	2,700	48 6 1½	0 2 7¾	44 8 6¼	0 2 5	0 10¾
1914-15	207	*10,869 4 11	725 15 4	10,143 9 7	2,903	52 10 2	0 2 10½	49 0 0	0 2 8¼	0 10¾

Total cost of Maintenance	£3,573 13 4
Less for feeding of 16 nurses (10 at 5s, and 6 at 3s. per week) in nursing home	176 16 0
	3,396 17 4

* This amount includes £228 3s. 8d. for Hospital probationers.

VICTORIA JUBILEE LYING-IN HOSPITAL.

Report for the year ended 31st March, 1915.

Kingston, March 31st, 1915.

Sir,

I have the honour to submit the report of the Victoria Jubilee Lying-in Hospital for the year ended March 31st, 1915.

The number of patients admitted during the year was 651, against 634 of the previous year. 433 of the patients were black, 210 coloured, 4 coolies, 4 white, 199 were married.

All patients on admission were tested as usual for Albuminuria (Bright's disease): a positive result was obtained in 81 cases, about 12 per cent. It will be observed that there was not a single case of breast trouble owing to careful management and instruction of the nursing mothers, any complication that might arise being taken in hand early and arrested. Cases of ephemeral fever rarely lasting over 36 hours, are mostly of nervous origin. Some patients become fretful and intolerant of hospital discipline before their prescribed stay of nine days is up.

There were fifteen deaths during the year, ten from puerperal convulsions, 2 malaria, one each from placenta prævia, epilepsy and Bright's disease. Thirteen of this number were received in extremis and lived only a few hours after admission. In most cases the patients being after many hours in labour were taken out of bed, sometimes in the middle of the cold night, put into a bus or cart and hurriedly jolted up to the Hospital arriving in a state of collapse or unconscious beyond all hope of recovery. Some of these would certainly have lived had they remained at home and received treatment.

There is obvious need for some organization as a Guild of Help or Maternity Club in Kingston from which nursing assistance could be obtained for such cases among the lower classes. It should include a clinical department for the early detection and treatment of Albuminuria (Bright's disease) by far the most serious and often fatal complication of pregnancy in this community. An institution of this sort might also do useful work in seeking out and advising expectant mothers in such matters as feeding, clothing and general care of infants with a view to reducing the infant mortality rate.

551 patients resided in Kingston, 83 in St. Andrew, 17 in more remote parishes.

The number of infants born was 576, of these 292 were males and 284 females. There were 9 cases of twins, 41 infants were still born, 20 of the infants died.

Eight pupil nurses were admitted for training. Seven passed their examinations and were awarded certificates. One failed but intends to sit for examination again during this year. In this educational work the Matron, Miss M. Thompson, has unsparingly devoted herself personally supervising almost every case of labour and instructing the pupils in the details of their duties. It is due to her untiring energy and watchfulness especially in matters of general management and sanitation that the hospital has now attained a very high standard of efficiency and usefulness.

The following most acceptable gifts were received:—Mrs. Ker gave £1 toward the nurses' Xmas dinner, also fruits, sweets and crackers. Mrs. Ross, chocolates and sweets. Mrs. Parsons, magazines, which are much appreciated by the patients. Mrs. Hollar gave baby clothing which often helps an urgent need. Bundles of clothing were received from Mrs. Orrett as Xmas gifts.

I have, etc.,

M. GRABHAM,
Visiting Medical Officer, Victoria Jubilee Hospital.

Diseases and deformities affecting the infant—

Cephalhæmatoma	..	..	2
Club Foot	..	..	1
Convulsions	..	..	2
Extra fingers	..	..	8
Entero-colitis	..	..	2
Imperforate anus	..	..	1
Hæmorrhage diathesis	..	..	1
Ophthalmis	..	..	19

Operations—

Version	..	..	21
Application of forceps	..	..	4
Embryotomy for impacted shoulder	..	..	1
Curetting	..	..	18
For ruptured perinaeum	..	..	46
For imperforate anus	..	..	1
For rectal abscess	..	..	1

SYNOPSIS OF CASES.

Presentations—

Vertex	..	..	540
Unreduced Occipito posterior	..	..	6
Footling	..	..	23
Transverse	..	..	6
Brow	..	..	1

Diseases and complications affecting the mother—

Abscess (ischio rectal)	..	..	1
Abortion	..	..	2
Adherent placenta	..	..	2
Albuminaria	..	..	81
Colitis	..	..	1
Cystocele	..	..	1
Deformed pelvis	..	..	1
Epilepsy	..	..	1
Fever ephemeral	..	..	32
Hydramnios	..	..	5
Hypertrophy of cervix	..	..	1
Hæmorrhage post partem	..	..	28
Hæmorrhage accidental	..	..	2
Inertia, uterine	..	..	12
Malaria	..	..	2
Neuritis	..	..	1
Placenta Prævia	..	..	5
Puerperal convulsions	..	..	18
Prolapse of cord	..	..	2
Rigidos	..	..	2
Tumours	..	..	4
Vomiting, pernicious	..	..	1

Financial Return of the Victoria Jubilee Lying-in-Hospital for the six years ended 31st March, 1910, 1911, 1912, 1913, 1914 and 1915.

Year.	Average daily No. of beds occupied.	Gross Expenditure.	Receipts.	Net expenditure after deducting receipts.	No. of patients admitted.	Average annual cost per occupied bed calculated on the gross expenditure.	Cost of maintenance alone per occupied bed per diem.	Daily cost per occupied bed calculated on the gross expenditure.	Average annual cost per occupied bed calculated on the net expenditure.	Average daily cost per occupied bed calculated on the net expenditure.
		£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1909-10 ..	19	1,256 2 5	361 1 9	895 0 8	650	66 2 8	0 1 4½	0 3 7¼	47 2 1	0 2 6¾
1910-11 ..	17	1,300 3 0	321 1 9	979 1 3	600	76 9 7	0 1 6¾	0 4 2¼	57 11 10	0 3 1¾
1911-12 ..	32	1,355 5 4	392 11 6	962 13 10	746	42 7 0½	0 0 10	0 2 3¾	30 1 8	0 1 7¾
1912-13 ..	30	1,430 12 9	366 8 6	1,064 4 3	653	47 13 9	0 0 11	0 2 7¼	35 9 5¾	0 1 11¼
1913-14 ..	27	1,245 4 3	573 16 4	671 7 11	634	46 2 4½	0 0 9¾	0 2 6¼	24 17 4	0 1 4¼
1914-15* ..	28	1,243 19 1	545 6 1	698 13 0	651	44 8 6½	0 0 8¾	0 2 5	24 19 0½	0 1 4½

* Includes Patients 16
do. Pupil Nurses 9
do. Charge Nurses 2
do. Head Nurse 1

Numerical Summary of results since the opening of the Institution.

Year.	No. of Patients.	Race.				Infants.				Deaths.	No. of Nurses trained.
		Black.	Coloured.	Coolies.	White.	Male.	Female.	Twins.	Still-born.		
1892-93 ..	89	67	22	..	..	20	34	..	14	4	4
1893-94 ..	219	171	44	3	1	74	85	1	35	9	11
1894-95 ..	239	185	48	2	4	76	96	6	27	3	6
1895-96 ..	217	187	26	1	3	89	86	3	40	1	5
1896-97 ..	378	281	92	4	1	173	189	6	39	7	8
1897-98 ..	444	319	120	3	2	229	210	12	37	10	6
1898-99 ..	500	345	146	4	5	249	253	13	60	7	10
1899-1900 ..	581	382	196	2	1	277	283	11	66	9	9
1900-1901 ..	483	339	135	5	4	241	227	6	38	9	9
1901-1902 ..	785	589	235	7	4	379	374	10	58	7	8
1902-1903 ..	651	429	219	2	1	332	325	19	51	11	12
1903-1904 ..	813	596	205	3	9	394	405	21	78	11	9
1904-1905 ..	655	475	174	2	4	339	307	20	62	8	11
1905-1906 ..	415	248	156	4	7	198	214	8	36	10	9
1906-1907 ..	441	352	79	3	7	221	215	15	29	11	6
1907-1908 ..	434	270	161	3	—	243	155	14	40	7	8
1908-1909 ..	596	400	188	3	5	300	268	7	49	10	6
1909-1910 ..	650	380	265	4	1	330	319	10	53	9	7
1910-1911 ..	600	382	212	3	3	288	316	15	60	5	7
1911-1912 ..	746	581	155	5	5	345	364	16	71	8	7
1912-1913 ..	653	446	195	8	4	350	291	18	52	9	7
1913-1914 ..	634	417	209	3	5	288	296	13	46	8	10
1914-1915 ..	651	433	210	4	4	292	284	9	41	15	7

LUNATIC ASYLUM.

Report for the year ended 31st March, 1915.

Sir,

I have the honour to submit the Annual Report of the Jamaica Lunatic Asylum for the year ended 31st March, 1915.

2. There were 1,341 inmates on the 31st March, 1914, and 1,399 on the 31st March, 1915, or an increase of 58 inmates to be accommodated and provided for.

3. The total number of patients under treatment was 1,670, with a daily average of 1,386.57.

4. The admissions numbered 329, of whom 158 were men and 171 women. Of these 284 were admitted for the first time, whilst 47 had been inmates on one or more former occasions. During the last quinquennial period our population has increased by 318, or an average of 63 per annum. This large increase is primarily due to deportation of harmless demented from the Canal Zone, who, after wandering aimlessly about the country, sooner or later find their way here.

5. The total number discharged was 161. Of these 156 recovered. 2 improved. 3, not improved, whilst 2 escaped only to be captured and re-admitted shortly after.

The rate of recovery calculated on the number of admissions was 47.27 per cent.

6. Of the 110 deaths, 41 were males and 69 females, giving a death-rate of 7.87 per cent. on the average under treatment. Two of the inmates who died had spent 37 and 39 years respectively in the Asylum.

One inmate suddenly attacked by another powerful inmate was battered against the concrete floor and his skull fractured before assistance could be rendered him. An inquest was held by the Coroner who was satisfied that no person could be blamed for the unfortunate occurrence. Another inmate lost his life by a piece of meat lodging in his throat and suffocating him.

A few cases were admitted in a moribund condition and died soon after admission.

7. Captain J. F. Siler, Medical Corps, United States Army, who accompanied Dr. Sambon to Jamaica in 1913, to collect information concerning pellagra, in an interesting report makes the following observations:—

- a. It was quite remarkable to find pellagra so plentiful in the Lunatic Asylum and at the Manning House (St. Elizabeth) and observe it with rarity in other parts of the Island.

If pellagra had a general distribution in Jamaica one would expect to find a number of cases in the Government Hospitals. Still more remarkable was its absence in the District Almshouses: Particular enquiry was made into the dietary of the Almshouses and it was found to be more monotonous and not so well-balanced as that in use at the Lunatic Asylum where pellagra was endemic.

- b. Pellagra existed in an endemic form in the Asylum for many years. The specific agent causing the disease is unquestionably active in the institution as many of the inmates had not acquired the disease until several years after commitment. The diet did not seem to contain sufficient fresh meat; others were of opinion it was much less monotonous than the dietary of the general population of like class.

- c. In certain parts of St. Elizabeth, no streams are to be found, the rainfall is irregular, crops frequently fail and the general population is not well nourished.

In the Manning House located in the dry district of the parish, was found an extensive focus of pellagra.

There are dry districts in other parts of the Island where the population is also poorly nourished, but pellagra was absent in these districts.

- d. Economic conditions in Jamaica and the dietary of the native population leave much to be desired—and if pellagra were due to specific dietary deficiencies—one would certainly expect to find it occurring in fairly great frequency in the general population. If specific deficiencies do exist in the diet which will serve to account for the disease, they are apparently not confined to one or two elements of diet.

- e. The presence of pellagra in endemic form in but two places, the Asylum and Manning House, its absence in the general population and its rarity in the Almshouses are very suggestive of a low grade infection in which poor nutrition plays an important part as a predisposing factor.

- f. The hypothesis of Dr. Sambon that pellagra is a protozoal disease transmitted by similium did not appear to us to be supported by our observations in Jamaica.

We failed to elicit any information suggesting that similium had ever been observed within the building or grounds of the Asylum, the nearest breeding place was 4 miles distant.

It was still less likely that similium could have been concerned, as an etiological factor, in the epidemic at the Manning House. This house is situated in a very arid region, and nearest potential breeding places were about 10 to 15 miles away.

8. Indoor and outdoor amusements were attended to with the usual zest, whilst the grounds were kept in order by the working gangs.

9. Our thanks are again due to the following ladies and gentlemen for thoughtfully sending illustrated papers and magazines for the inmates:—Mrs. Jordon Andrews, Miss Thompson, John McDonald, Esq., R. S. Haughton, Esq., Archibald Munro, Esq., A. E. Perkins, Esq., J. E. Kerr & Co., Lascelles DeMercado & Co., The Jamaica Institute, The Jamaica, Liguanea and St. Andrew Clubs.

10. Mrs. H. K. Bourne, Mrs. Trefusis, Dr. Mary O'Malley, the Government Hospital for insane, Washington, D.C., Dr. Andrew Balfour, C.M.G., and others visited our wards, and I have reason to believe were not dissatisfied with their visits.

11. I regret to record the death of Mr. Gerald Massey Jopp, the dispenser, after 15½ years faithful service. He joined the public service 35 years ago and for many years was dispenser to the Lepers Home, Spanish Town. He is succeeded by Mr. W. A. James, of the Linstead Hospital.

Dr. Mark Anthony, Second Assistant Medical Officer, resigned, and the vacancy was filled by the appointment of Dr. H. E. Bond.

12. The sum voted for the maintenance of the Asylum (including a special warrant for £946) was £21,351 0s. 11d.

The sum expended was £20,336 18s. 10d.

Under Law 26 of 1914 a rate of 2½d. per capita of the population was levied by the Government to re-imburse a moiety of the estimated cost of Parochial patients.

I am, Sir,

Your obedient servant,

D. J. WILLIAMS, Med. Supt.
May 30th, 1915.

Hon. J. Errington Ker,
Suptg. Medical Officer.

TABLE I.—Shewing the actual admissions, re-admissions, discharges and deaths during the year ended 31st March, 1915.

		Males.	Females.	Total.	Males.	Females.	Total.
In Asylum 1st April, 1914	.. ..	..	..	..	647	694	1,341
Cases admitted—							
First admissions	.. ..	137	145	282			
Not first admissions	.. ..	21	26	47			
Captured	.. ..	..	..	..
Birth	.. ..	..	..	..
Total cases admitted during the year	.. ..	..	..	..	158	171	329
Total cases under care during the year	.. ..	..	..	..	805	865	1,670
Cases discharged—							
Recovered	.. ..	69	87	156			
Relieved	.. ..	2	..	2			
Not improved	.. ..	1	2	3			
Escaped	.. ..	..	..	..
Died	.. ..	41	69	110			
Infant removed	.. ..	..	..	..
Infant died	.. ..	..	..	..
Total discharged and died during the year	.. ..	..	..	..	113	158	271
Remaining in Asylum 31st March, 1915	.. ..	..	..	..	692	707	1,399
Average number resident during the year	.. ..	..	..	..	670	716	1,386
Persons under care during the year (<i>i.e.</i> , separate persons in contradistinction to cases which may include the same individual more than once)	.. ..	..	..	..	802	858	1,660
Persons admitted including 2 infants born in Asylum	.. ..	..	..	..	155	164	319
Persons recovered do do	.. ..	..	..	..	69	86	155

TABLE Ia.—Shewing the number of previous attacks among those admitted during the year 1914-1915, distinguishing those attacks that have been treated to recovery and discharged.

Number of previous attacks.	Having had previous attacks.					
	All attacks.			Attacks followed by discharge or recovery.		
	Males.	Females.	Total.	Males.	Females.	Total.
Have had 1 previous attack	.. 30	36	66	7	5	12
Have had 2 previous attacks	.. 6	5	11	4	..	4
Have had 3 previous attacks	.. ..	2	2	..	1	1
Have had 4 previous attacks	.. ..	2	2	..	2	2
Have had more than 5 attacks	.. 1	5	6	1	1	2
	37	50	87	12	9	21

TABLE II.—Shewing the admissions, re-admissions, discharges and deaths for the past eighteen years ended 31st March, 1915.

		Males.	Females.	Total.	Males.	Females.	Total.
Remaining on 31st March, 1897	..	..	..	..	345	377	722
Admitted during the last eighteen years	..	1,912	1,870	3,782			
Re-admissions	..	357	306	663			
Total number of admissions	..	..	..	..	2,269	2,176	4,445
Total number under care	..	..	..	..	2,614	2,553	5,167
Discharged cases—							
Recovered	..	1,004	967	1,971			
Relieved	..	36	19	55			
Not improved	..	27	11	38			
Died	..	852	849	1,701			
Escaped and not captured	..	3	..	3			
Total discharged and died	..	..	..	..	1,922	1,846	3,768
Remaining 31st March, 1915	..	..	..	..	692	707	1,399
Average yearly number resident	..	..	..	..	508	519	1,027

TABLE III.—Shewing the Admissions, Discharges and Deaths, with the mean Annual Mortality, and the proportion of recoveries per cent. of the Admissions for each of the last eighteen years

Year.	Admitted.			Discharged.												Remained 31st March in each year			Average number Resident.			Percentage of Recoveries. on admission.			Percentage of Deaths on average number Resident.					
				Recovered.						Relieved.			Not Improved.															Died.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.									
1897-98	109	95	204	34	34	68	..	..	2	2	..	25	44	69	393	394	787	377	382	759	31.19	36.84	34.01	6.63	11.16	8.89		
1898-99	88	80	168	66	53	119	..	..	2	2	2	32	31	63	381	386	767	386	388	774	75.	66.25	70.62	8.29	7.98	8.13		
1899-1900	96	93	189	34	32	66	1	..	2	2	2	38	30	68	402	417	819	390	399	789	35.41	34.41	34.90	9.74	7.52	8.56				
1900-01	104	96	200	48	42	90	2	..	2	..	..	32	27	59	424	444	868	414	430	844	46.15	43.75	44.95	7.72	6.27	6.99		
1901-02	99	83	182	55	48	103	3	1	4	2	..	40	38	78	423	440	863	423	439	862	55.55	57.83	56.69	9.45	8.65	9.05				
1902-03	118	108	226	41	35	76	..	..	..	..	..	25	29	54	475	484	959	456	459	915	43.74	32.40	33.57	5.48	6.31	5.89
1903-04	105	101	206	34	33	67	..	..	3	..	3	38	57	95	505	495	1,000	492	480	972	32.38	32.67	32.52	7.72	11.87	9.79		
1904-05	124	116	240	53	37	90	..	1	1	3	1	37	74	111	536	498	1,034	520	502	1,022	42.74	31.89	37.31	7.11	14.74	10.92				
1905-06	124	96	230	52	53	105	11	4	15	1	..	44	42	86	562	495	1,057	545	503	1,048	38.80	55.20	47.	8.07	8.34	8.20				
1906-07	109	125	234	83	68	151	8	5	13	..	..	76	45	121	504	502	1,006	543	505	1,048	76.14	54.40	55.27	13.99	8.91	11.45		
1907-08	148	131	279	58	61	119	3	3	6	..	1	72	55	127	519	513	1,032	520	513	1,033	39.18	46.56	42.87	13.84	10.72	12.28				
1908-09	114	123	237	51	34	85	4	2	6	1	2	81	39	120	496	559	1,055	515	535	1,050	44.73	27.64	36.18	15.72	7.28	11.50				
1909-10	139	123	262	46	51	97	1	1	2	2	1	60	73	133	525	556	1,081	510	571	1,081	33.09	41.46	37.27	11.76	12.78	12.27				
1910-11	164	160	324	71	72	143	1	..	1	1	..	49	42	91	567	602	1,169	546	591	1,137	43.29	45.	44.14	8.97	7.10	8.03				
1911-12	138	130	268	67	77	144	3	2	5	1	..	40	51	91	593	602	1,195	581	602	1,183	48.55	59.23	53.89	6.88	8.47	7.67				
1912-13	160	189	349	73	61	134	..	..	..	1	..	45	50	95	634	680	1,314	625	647	1,272	45.62	32.27	38.94	7.2	7.72	7.46	
1913-14	162	156	318	69	89	158	1	..	1	1	..	77	53	130	647	694	1,341	637	686	1,323	42.59	57.05	49.82	12.08	7.72	9.90				
1914-15	158	171	329	69	87	156	2	..	2	1	2	41	69	110	692	707	1,399	670	716	1,386	43.67	50.87	47.27	6.11	9.63	7.87				
Totals	2,269	2,176	4,444	1,004	967	1,971	40	19	59	23	11	34	852	849	1,701	9,278	9,468	18,746	9,150	9,348	18,498	817.82	805.72	811.77	166.76	163.17	164.96			
Average for 18 years	..	..	..	..	..	..	..	..	..	..	..	..	..	..	515.44	526.	1041.44	508.33	519.33	1027.66	45.43	44.76	45.09	9.26	9.06	9.16

TABLE V.—Shewing the causes of Death during the year 1914-1915 with the ages at death.

[illegible]

TABLE VI.—Shewing the length of residence in those discharged recovered and in those who have died during the year, 1914-1915.

Length of Residence.				Recovered.			Died.		
				Males.	Females	Total.	Males.	Females	Total.
Under 1 month	..	..	..	..	..	..	3	3	6
From 1 to 3 months	..	..	..	12	15	27	2	6	8
From 3 to 6 "	..	..	..	22	31	53	7	12	19
From 6 to 9 "	..	..	..	13	14	27	5	7	12
From 9 to 12 "	..	..	..	8	13	21	..	6	6
From 1 to 2 years	..	..	..	8	7	15	8	7	15
From 2 to 3 "	..	..	..	4	3	7	2	6	8
From 3 to 5 "	..	..	..	..	2	2	2	3	5
From 5 to 7 "	..	..	..	..	..	..	2	2	4
From 7 to 10 "	..	..	..	2	2	4	1	5	6
From 10 to 12 "	..	..	..	..	..	..	2	4	6
From 12 to 15 "	..	..	..	..	..	..	3	2	5
From 15 to 20 "	..	..	..	..	..	..	1	1	2
From 20 to 25 "	..	..	..	..	..	..	2	3	5
From 25 to 30 "	..	..	..	..	..	..	1	..	1
From 30 to 35 "	..	..	..	..	..	..	..	..	..
From 35 to 40 "	..	..	..	..	..	..	..	2	2
Upwards of 40 "	..	..	..	..	..	..	..	..	..
				69	87	156	41	69	110

TABLE VII.—Showing the duration of the disorder on admission in the admissions, discharges and deaths during the year ended 31st March, 1915.

CLASS.	Admissions.			Discharges.						Deaths.		
				Recovered.			Removed, Relieved or otherwise.					
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
<i>First Class</i> —First attack, and within 3 months on admission	89	98	187	38	49	87	3	2	5	31	30	61
<i>Second Class</i> —First attack, above 3 and within 12 months on admission	10	16	26	1	5	6	..	..	..	2	11	13
<i>Third Class</i> —Not first attack, and within 12 months on admission	32	23	55	21	15	36	..	..	..	2	12	14
<i>Fourth Class</i> —First attack or not, but of more than 12 months on admission	15	27	42	3	18	21	..	..	..	4	13	17
<i>Fifth Class</i> —Congenital	..	..	..	..	..	..	..	..	..	1	..	1
Unknown	12	7	19	6	..	6	..	..	..	1	3	4
Total	158	171	329	69	87	156	3	2	5	41	69	110

TABLE VIII.—Shewing in quinquennial periods the ages of those admitted, recovered and died during the year 1914-15 and those remaining on 31st March, 1915.

Ages.	Admissions.			Recoveries.			Deaths.			Patients Resident 31st March, 1915.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
From 5 to 10 7rs.	..	..	..	..	..	..	..	..	..	..	..	..
“ 10 to 15	..	1	1	..	1	1	..	..	..	..	1	1
“ 15 to 20	9	25	34	7	17	24	1	4	5	5	18	23
“ 20 to 25	34	22	56	12	14	26	4	8	12	57	30	87
“ 25 to 30	26	25	51	12	9	21	2	12	14	77	67	144
“ 30 to 35	23	23	46	12	15	27	5	8	13	109	105	214
“ 35 to 40	20	29	49	12	13	25	2	5	7	80	106	186
“ 40 to 45	16	22	38	6	6	12	6	5	11	97	108	205
“ 45 to 50	9	11	20	2	8	10	7	5	12	85	57	142
“ 50 to 55	10	5	15	4	2	6	6	6	12	61	76	137
“ 55 to 60	6	1	7	..	1	1	5	3	8	44	47	91
“ 60 to 65	3	3	6	1	1	2	2	6	8	47	42	89
“ 65 to 70	2	1	3	1	..	1	1	1	2	12	22	34
“ 70 to 75	..	2	2	..	..	..	..	2	2	7	15	22
“ 75 to 80	..	1	1	..	..	..	..	2	2	9	7	16
“ 80 to 85	..	..	..	..	..	..	..	1	1	1	3	4
“ 85 to 90	..	..	..	..	..	..	..	1	1	1	2	3
“ 90 to 95	..	..	..	..	..	..	..	..	..	..	1	1
Unknown	..	..	..	..	..	..	..	..	..	..	..	..
Totals	158	171	329	69	87	156	41	69	110	692	707	1,399
Mean Age	33.39	32.69	33.04	32.62	30.86	31.74	42.29	41.11	41.70	41.17	42.57	41.87

TABLE IX.—Shewing the condition as to Marriage in the Admissions, Recoveries and Deaths during the year ended 31st March, 1915.

Condition in reference to Marriage.			Admissions.			Recoveries.			Deaths.		
			M.	F.	T.	M.	F.	T.	M.	F.	T.
Single	..	..	109	121	230	51	58	109	19	48	67
Married	..	..	42	42	84	16	27	43	19	13	32
Widowed	..	..	6	8	14	2	2	4	3	5	8
Unknown	..	..	1	..	1	..	..	..	..	3	3
Divorced	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	158	171	329	69	87	156	41	69	110

TABLE X.—Showing the probable causes of insanity in the Patients admitted during the year ended
31st March, 1915.

Cause of Insanity.	Number of instances in which each cause was assigned.											
	Number of cases.											
	Admissions—Males, 158; Females, 171; Total, 329.											
	As pre-disposing cause.			As exciting cause.			As pre-disposing or exciting where these could not be distinguished.			Grand Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Moral—												
Domestic trouble (including loss of relatives and friends)
Adverse circumstances (including business anxieties and pecuniary difficulties)	2	..	2	..	..	..	2	..	2
Mental anxiety and worry (not included under above two heads) and overwork	6	6	..	..	..	..	6	6
Religious excitement	2	1	3	..	..	..	2	1	3
Love affairs (including seduction)
Fright and nervous shock
Grief
Earthquake shock
Physical—												
Intemperance in drink	4	2	6	..	..	..	4	2	6
Sexual Intemperance
Venerial Diseases
Self-abuse (sexual)
Over-exertion
Ganga-smoking	1	..	1	..	..	..	1	..	1
Accident or injury
Puberty
Fevers	3	6	9	..	..	..	3	6	9
Privation and starvation	1	1	..	..	..	..	..	..	1	1
Senility
Other bodily disease
Previous attacks	..	37	48	85	..	..	..	..	..	37	48	85
Hereditary influence	..	46	46	92	..	..	..	..	..	46	46	92
Congenital defect ascertained
Adolescence	..	27	..	27	..	..	..	..	..	27	..	27
Epilepsy	..	12	..	12	..	8	8	..	..	12	8	20
Puerperal	3	3	..	..	..	..	3	3
Tubercular disease
Syphilis
Not known	61	62	123	..	..	..	61	62	123
Other ascertained causes
Childbirth
Traumatism	1	1	..	..	..	..	1	1
Pellagra
Organic disease
Yaws	1	1	..	..	..	..	1	1
War excitement	2	..	2	..	..	..	2	..	2

TABLE XI.—Shewing the form of mental disorder in the Admissions, Recoveries and Deaths during the year and the form of mental disorder of the inmates on 31st March, 1915.

Form of Mental Disorder.	Admissions.			Recoveries.			Deaths.			Remaining in Asylum.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Congenital or Infantile mental deficiency—												
(a) with Epilepsy .. ..	..	..	..	..	..	..	..	..	..	12	..	12
(b) without Epilepsy .. ..	..	..	..	..	..	..	1	..	1	26	..	26
Epilepsy—Acquired	13	11	24	3	..	3	1	..	1	53	46	99
General Paralysis of the Insane ..	4	..	4	..	2	2	1	7	8	3	..	3
Mania—												
Acute	76	66	142	38	23	61	16	15	31	132	99	231
Chronic	15	2	17	1	4	5	13	9	22	290	222	512
Recurrent	37	76	113	24	50	74	2	..	2	47	30	77
a Potu .. ..	..	..	..	..	..	..	..	19	19	..	..	..
Puerperal .. ..	..	3	3	..	4	4	..	..	..	..	5	5
Senile	2	2	4	..	..	..	1	3	4	2	13	15
Melancholia—												
Acute	9	3	12	3	..	3	2	4	6	6	20	26
Chronic .. ..	..	..	..	..	..	..	1	1	2	1	10	11
Recurrent .. ..	..	6	6	..	4	4	..	1	1	..	15	15
Puerperal .. ..	..	..	..	..	..	..	..	..	..	..	8	8
Senile .. ..	..	..	..	..	..	..	..	..	..	..	12	12
Dementia—												
Primary .. ..	..	1	1	..	..	..	..	7	7	..	15	15
Secondary	1	..	1	..	..	..	3	..	3	116	212	328
Senile .. ..	..	1	1	..	..	..	..	3	3	2	..	2
Organic (<i>i.e.</i> from tumours, coarse brain lesions, etc.) ..	1	..	1	..	..	..	..	..	..	2	..	2
	158	171	329	69	87	156	41	69	110	692	707	1,399

TABLE XII.—Shewing the previous occupations of patients admitted during the year, 1914-1915.

Males.

Occupation.	No.	Occupation.	No.
Labourers	85	Railway Brakesman	1
Bookbinder	1	Tailors	3
Shoemakers	3	Mechanic	1
Telephonist	1	Fishermen	2
Teacher	1	Coachman	1
Clerks	2	Tanner	1
Waiter	1	Fitter	1
Ex-Constables	3	Cooper	1
Cultivators	9	Gardeners	3
Bookkeeper	1	Butchers	2
Barber	1	Pedlar	1
Salesman	1	Painter	1
Sailors	3	Bakers	3
Ex-soldiers	2	Unknown	6
Planter	1	Musician	1
Tobacconist	1	Mason	1
Carpenters	9	Fireman	1
Journalist	1		
Blacksmith	1		
Hatter	1	Total	158

Females.

Occupation.	No.	Occupation.	No.
Labourers	95	Housewife	1
Seamstresses	3	Higgler	1
Dressmakers	16	Nurse	1
Washerwomen	10	Teacher	1
Clerk	1	Cooks	2
Domestic Servants	27	Vagrant	1
Baker	1	Unknown	6
Housekeeper	1		
Gentlewomen	4	Total	171

TABLE XIII.—Showing the Physical condition of patients admitted in 1914-1915.

	Males.	Females.	Total.
In good bodily health and condition	23	11	34
In fair bodily health and condition	116	140	256
In poor, feeble, very feeble, bad and exhausted condition	19	16	35
Indifferent .. ..	..	4	4
Emaciated .. ..	..	..	..
Total	158	171	329

FINANCIAL STATEMENT.

TABLE XIV.—Cost of maintenance for the year, 1914-15.

	£	s.	d.
Salaries	2,566	10	7
Wages	4,281	11	10
Religious Services	52	10	0
Provisions	9,581	1	0
Necessaries	1,052	10	9
Clothing and bedding	1,447	6	11
Equipment	232	15	4
Furniture	64	18	10
Wine and spirits	24	11	8
Surgery and Dispensary	273	17	9
Funeral expenses	76	15	9
Removals	37	16	8
Tenants Repairs	91	6	4
Farm and grounds	90	0	9
Miscellaneous	100	2	5
Telephones	24	3	0
Scavengery	0	16	0
Lighting	338	3	3
	£20,336	18	10

LESS RE-IMBURSEMENTS.

Contributing Patients, &c.	£961	17	11
Immigration Fund (Law 31 of 1910)	204	15	5 $\frac{1}{4}$
Parochial Poor Rates (Law 26 of 1914)	8,660	4	9 $\frac{1}{2}$
Net cost to General Revenue	£10,510	0	8 $\frac{1}{4}$

TABLE XV.—Parochial Maintenance Account, Law 30 of 1873 and 26 of 1914.

	Law 30 of 1873.			Amount for 1913-14.	Law 26 of 1914.			Amount for 1914-15.
	No. of Patients, 1913-14.				No. of Patients, 1914-15.			
	Males.	Fe- males.	Total.		Males	Fe- males.	Total.	
				£ s. d.				£ s. d.
Kingston ..	122	165	287	1,703 11 6 $\frac{3}{4}$	144	184	328	608 7 11
St. Andrew ..	53	62	115	677 19 9 $\frac{1}{2}$	52	63	115	549 14 4 $\frac{1}{2}$
St. Thomas ..	21	36	57	331 1 3	19	40	59	409 13 9
Portland ..	22	27	49	279 14 7 $\frac{1}{4}$	24	34	58	514 3 4
St. Mary ..	54	38	92	507 9 9 $\frac{1}{4}$	51	42	93	759 19 2
St. Ann ..	37	43	80	517 10 7	44	48	92	735 18 11 $\frac{1}{2}$
Trelawny ..	16	31	47	284 9 1 $\frac{1}{2}$	17	27	44	369 8 1 $\frac{1}{2}$
St. James ..	36	46	82	483 15 10 $\frac{1}{4}$	34	46	80	431 0 0
Hanover ..	16	26	42	262 12 2	15	28	43	389 18 4
Westmoreland ..	53	71	124	722 11 3 $\frac{3}{4}$	51	72	123	692 5 0
St. Elizabeth ..	52	58	110	640 7 8 $\frac{2}{3}$	46	55	101	819 15 10
Manchester ..	53	38	91	501 1 10 $\frac{1}{2}$	50	37	87	679 2 1
Clarendon ..	61	52	113	699 16 11 $\frac{1}{2}$	61	57	118	769 18 9
St. Catherine ..	107	105	212	1,218 7 5	107	99	206	917 15 0
Port Royal ..	1	..	1	7 3 9 $\frac{1}{2}$	1	..	1	13 4 2
	704	798	1,502	8,837 13 9 $\frac{1}{2}$	716	832	1,548	8,660 4 9 $\frac{1}{2}$

TABLE XVI.—Statement respecting Minor Funds of the Jamaica Lunatic Asylum to 31st March, 1915.

1.—SERVANTS' FINE FUND.

	£	s.	d.
Balance on 31st March, 1914	237	4	5 $\frac{3}{4}$
Receipts in 1914-1915	14	16	0
	252	0	5 $\frac{1}{4}$
Expenditure 1914-1915	9	3	6
	242	16	11 $\frac{3}{4}$
Amount at credit 31st March, 1915			

2.—PATIENTS' FUND.

	£	s.	d.
Balance on 31st March, 1914	1,093	3	11 $\frac{1}{2}$
Receipts in 1914-15	168	17	7
	1,262	1	6 $\frac{1}{2}$
Expenditure during 1914-1915	115	17	4 $\frac{1}{2}$
	1,146	4	2
Amount at Credit 31st March, 1915			

3.—O'LOUGHLIN'S FUND.

	£	s.	d.
Balance on 31st March, 1914	436	2	9
Receipts in 1914-1915	14	19	8
	451	2	5
Expenditure during 1914-1915	21	7	9
	429	14	8
Amount at credit 31st March, 1915			

TABLE NO. XVII.—Shewing the total number of patients under treatment from 1882-83 to 1914-1915; the Total Cost; the Re-imbursements-in-Aid of Expenses incurred by the Government; the sources from which they are derived; and the Cost of Lunatic Asylum to General Revenue.

Years.	Total number of Patients under treatment.	Total Cost.		Contributing Patients, &c.		Immigration Department.		Parochial Poor Rate.		Total Reimbursements-in-Aid.		Net Cost of the Lunatic Asylum to General Revenue.
		£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	
1882-83	512	7,061	16 9½	189	14 5	None.		4,643	8 8	4,833	3 1	2,228 13 8½
1883-84	505	6,935	14 2½	208	6 2	"		5,203	10 11	5,411	17 1	1,523 17 1½
1884-85	513	6,871	12 6	252	13 2	"		4,879	16 0	5,132	9 2	1,739 3 4
1885-86	531	7,027	7 3	376	6 9	"		4,677	15 5	5,054	2 2	1,973 5 1
1886-87	530	7,067	10 4½	415	15 7	"		4,971	6 3	5,387	1 10	1,680 8 6½
1887-88	541	7,710	5 6	365	4 7	"		5,587	15 9	5,953	0 4	1,757 5 2
1888-89	584	8,781	14 0	391	0 6	"		6,677	13 2	7,068	13 8	1,713 0 4
1889-90 (6 months)	541	4,755	14 0	151	13 5	"		3,796	11 11	3,948	5 4	807 8 8
1890-91	648	10,093	10 7½	301	10 0	"		8,208	4 11	8,509	14 11	1,583 15 8½
1891-92	704	11,578	17 2½	471	6 10	"		9,276	3 2¾	9,747	10 0¾	1,831 7 1½
1892-93	702	11,453	1 3¾	532	6 0	"		9,369	19 4	9,902	5 4	1,550 15 11¾
1893-94	729	11,280	18 1	492	16 4	"		9,197	13 9	9,690	10 1	1,590 8 0
1894-95	741	11,648	15 6½	384	2 8	"		9,457	16 2½	9,841	18 10½	1,806 16 8
1895-96	795	11,867	3 1¾	418	13 6	"		9,941	19 0	10,360	12 6	1,506 10 7¾
1896-97	851	12,901	18 4¼	458	15 2	"		10,932	11 0	11,391	6 2	1,510 12 2¼
1897-98	926	14,061	12 9	532	19 8	"		11,772	1 4	12,305	1 0	1,756 11 9
1898-99	953	13,651	4 1	359	10 8	"		11,767	0 9	12,126	11 5	1,524 12 8
1899-1900	956	13,559	10 1	454	9 1	"		11,514	19 3	11,969	8 4	1,590 1 9
1900-1901	1,019	14,445	3 2½	525	8 5	"		12,333	1 8½	12,858	10 1½	1,586 13 1
1901-1902	1,050	14,759	17 8	547	3 10½	"		12,468	15 9¼	13,015	19 7¾	1,743 18 0¼
1902-1903	1,089	15,029	0 6	517	18 1½	"		13,101	14 3½	13,619	12 5	1,409 8 1
1903-1904	1,165	16,017	7 10	406	6 2	"		13,926	12 3½	14,342	18 5½	1,674 9 4½
1904-1905	1,240	16,007	2 0	449	9 2	"		13,843	10 0¾	14,292	19 2¾	1,713 6 0¼
1905-1906	1,264	16,852	9 7½	631	9 11½	"		14,396	14 5	15,028	14 4½	1,823 15 3
1906-1907	1,308	16,298	17 10	654	4 3½	"		14,246	2 7	14,900	6 10½	1,398 10 11
1907-1908	1,285	17,078	8 3	474	1 3	"		15,304	11 4½	15,778	12 7½	1,299 15 7½
1908-1909	1,269	17,786	8 11	633	5 10½	"		15,828	13 8½	16,461	19 7	1,324 9 4
1909-1910	1,320	17,453	7 7¾	459	16 1	"		15,934	10 4¼	16,394	6 5¼	1,059 1 2½
1910-1911	1,409	19,131	15 7	676	7 10	"	5 1	16,540	10 4¼	17,263	3 6½	1,868 12 0½
1911-1912	1,439	17,797	1 2	735	0 8	"	131 11 0¾	15,722	17 11	16,589	9 7¾	1,207 11 6¼
1912-1913	1,548	18,414	4 1	889	13 3	"	194 11 9¾	8,237	10 8	9,321	15 8½	9,092 8 4½*
1913-1914	1,634	19,613	14 8¼	917	4 0	"	185 17 9¼	8,837	13 9½	9,940	15 6¾	9,672 19 1½
1914-1915	1,670	20,336	18 10	961	17 11	"	204 15 5¼	8,660	4 9½	9,826	18 1¼	10,510 0 8¼
..	..	435,330	3 7¾	16,236	11 4½		763 11 6	341,259	0 10¼	358,269	13 8¾	77,059 13 1½

* This increase is due to General Revenue being charged with half of the cost of maintenance of parochial patients, hitherto borne by the parishes concerned.

TABLE No. XVIII.—A Return shewing the General Financial and other Operations of the Lunatic Asylum from the Year 1874-75 to the Year 1914-1915.

Year.	Daily Average Number.	Salaries. and Religious Services.	Wages.	Provisions.	Necessaries.	Clothing, Furniture and Bedding.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1874-75	324.43	1,412 2 10	879 15 7½	3,037 14 1½	139 5 0	487 0 10
1875-76	324.21	1,553 13 10	923 4 10½	2,910 11 7¼	116 13 8¾	387 12 3
1876-77	342.52	1,660 4 11	868 8 2	2,832 18 11	134 15 11½	347 12 11½
1877-78	361.57	1,705 3 10	851 7 0½	2,959 18 10	161 10 6	379 8 6½
1878-79	364.06	1,853 6 4	805 8 10½	3,167 9 11½	224 0 10	333 12 2
1879-80	381.25	1,782 18 2	888 11 2	3,161 17 4	176 4 2	328 10 9½
1880-81	368.48	1,771 16 6	884 1 3	3,272 19 3½	218 3 2	289 10 3
1881-82	358.67	1,784 8 0	861 12 11	2,963 9 9	231 5 4	303 14 5
1882-83	364.06	1,829 3 8	922 2 5	3,152 13 8½	220 19 7	322 0 6½
1883-84	396.05	1,708 12 10	932 15 5½	3,203 7 0	174 4 7	372 11 9½
1884-85	399.98	1,792 10 10	936 2 3½	3,079 11 8	166 7 0	387 4 4
1885-86	382.09	1,843 11 0	923 0 0	3,150 1 10½	176 4 4	345 9 6
1886-87	407.58	1,556 16 7	933 13 2	3,416 13 5	216 19 8	421 2 3
1887-88	398.00	1,533 14 7	994 18 7	3,741 6 1½	270 19 10	408 6 3
1888-89	438.24	1,783 9 9	1,161 7 10	4,280 19 5	358 0 0	438 3 2
1889-90 (6 mons.)	465.17	943 10 10	579 11 11	2,351 14 0	190 8 7	209 9 6
1890-91	496.16	1,918 8 6	1,268 15 0	5,102 14 2	403 6 6	433 4 11½
1891-92	543.93	1,934 9 8	1,462 14 6½	6,035 16 4	424 12 8½	685 7 9
1892-93	558.57	1,969 0 0	1,461 6 9½	5,421 17 7¼	514 18 2	691 17 8½
1893-94	571.98	2,239 1 4	1,509 19 3	5,299 17 4½	494 0 1	599 5 11½
1894-95	592.72	2,394 17 3	2,259 5 2	4,565 11 10½	529 13 7	667 8 10¼
1895-96	636.78	2,357 1 0	2,328 16 7	4,772 11 10¼	499 1 6	625 2 5
1896-97	694.15	2,519 17 9	2,410 18 3	5,336 10 2	545 9 2¾	803 18 8½
1897-98	759.70	2,554 1 11	2,838 16 10	5,470 9 11	615 17 4¼	993 2 4½
1898-99	774.96	2,586 1 2	3,175 7 6	5,342 10 9¾	529 7 0¾	924 14 4½
1899-1900	789.03	2,441 4 10	3,202 3 5	5,367 9 11	581 0 11	977 9 3½
1900-1901	844.32	2,564 0 11	3,198 9 11	5,807 12 5½	781 1 0½	992 2 6½
1901-1902	862.68	2,438 8 6	3,266 7 4	6,007 9 7½	799 8 4½	1,197 6 1¼
1902-1903	915.42	2,486 19 2	3,367 2 11	6,113 5 10¼	799 5 2	1,099 16 1¼
1903-1904	972.20	2,391 1 10	3,419 12 9	6,880 5 2¾	884 2 7	1,408 11 11
1904-1905	1022.26	2,142 4 10	3,470 1 11	7,618 9 3	882 7 4	1,069 3 9
1905-1906	1048.56	2,114 14 6	3,543 15 6	8,342 0 8½	979 19 10½	797 11 10
1906-1907	1048.74	2,230 17 7	3,672 11 10	7,535 11 0	994 15 4½	1,023 19 0
1907-1908	1033.61	2,302 16 7	3,784 15 8	8,034 9 1	305 12 9	1,525 9 7
1908-1909	1050.02	2,376 6 3	3,825 10 3	8,874 4 2	426 3 4	1,212 8 5
1909-1910	1081.00	2,432 0 0	3,834 1 9	8,616 8 1½	460 4 6	..
1910-1911	1137.15	2,451 6 5	3,944 3 1	9,364 13 9	369 15 9	..
1911-1912	1183.81	2,403 14 9	4,001 13 7	8,422 13 7	392 6 0	..
1912-1913	1271.94	2,449 3 2	4,048 7 9	8,445 0 10	571 2 0	..
1913-1914	1323.34	2,579 14 0	4,087 2 11	9,404 16 11¾	620 18 9	..
1914-1915	1386.57	2,619 0 7	4,281 11 10	9,581 1 0	1,052 10 9	..

TABLE NO. XVIII., *continued.*

Year.	Wine, Spirits and Beer.	Surgery and Dispensary.	Funeral Ex- penses.	Tenants' Re- pairs.	Farm and Garden.	Miscellaneous and Telephone.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1874-75	90 0 3½	85 19 1½	32 18 6	136 16 7	265 0 6	99 5 7
1875-76	74 6 6	124 6 11	44 7 0	135 13 9	297 14 2½	99 10 5½
1876-77	59 12 6	65 10 6½	36 19 4½	129 13 11½	251 18 2	68 3 4½
1877-78	34 2 9	99 9 7½	41 9 9½	134 15 6½	195 3 1½	192 16 6
1878-79	30 5 9	49 4 7	38 10 1	104 4 8	151 6 4	175 18 10
1879-80	34 11 0	76 13 2	50 1 5	122 3 0½	218 14 5½	222 13 4
1880-81	57 10 0	65 13 2½	110 19 5	122 18 0	211 15 5½	215 12 9
1881-82	48 18 6	49 10 7½	71 4 11	117 0 11	145 15 1	243 3 3
1882-83	30 7 0	32 5 1½	123 12 6	116 1 8	87 1 9½	199 18 5½
1883-84	61 4 0	68 11 8	78 3 3	129 10 9½	97 8 3½	84 11 6½
1884-85	46 18 0	25 18 4	84 10 8½	112 3 7½	122 7 10	98 8 5½
1885-86	56 16 0	30 18 11	108 3 8	125 9 3	132 0 7	112 6 7½
1886-87	56 0 0	68 10 4	52 5 10	120 12 1	122 3 10½	71 12 2
1887-88	65 13 4	67 2 7½	61 5 1½	282 0 2½	151 5 11	109 10 2
1888-89	68 14 0	104 15 7	78 5 9	151 5 8	134 8 4	206 19 9
1889-90 (6 mons.)	32 14 6	101 7 0	41 1 5	105 1 0	88 5 11	88 16 2
1890-91	40 12 0	168 9 10	66 16 0	176 3 3½	160 3 0	190 11 7½
1891-92	45 13 6	141 18 3	78 8 3	190 6 2	171 9 4	175 12 2½
1892-93	41 12 6	207 7 7	71 2 8	233 0 6½	177 14 11	187 6 4
1893-94	37 6 6	184 10 4	79 7 0	191 16 0½	177 14 3	194 12 8½
1894-95	37 2 8	195 3 4	68 5 11	239 19 2¼	194 10 8	234 16 1½
1895-96	39 7 9	197 17 10	47 11 8	238 19 3	197 18 11	235 4 9½
1896-97	33 7 6	194 1 4	50 10 2½	259 7 7	219 4 9	242 16 10½
1897-98	51 0 6	238 4 2½	64 2 11	289 1 8	262 7 3¼	366 2 3½
1898-99	31 10 2½	253 15 2½	68 2 4½	164 17 3¼	153 12 11½	215 13 5½
1899-1900	35 0 3	218 16 1	72 12 6½	144 19 2½	137 17 9	251 17 1½
1900-1901	39 1 6	133 0 2	45 0 9	163 15 7½	149 17 7	265 3 6½
1901-1902	43 0 6	210 15 0	61 17 4	147 17 7¼	145 14 8¾	254 2 4
1902-1903	44 13 0	220 11 10	46 2 5	171 10 1¾	151 0 4½	262 12 1½
1903-1904	60 16 0	210 18 3	79 18 4	187 6 10	153 2 4½	266 15 0¾
1904-1905	42 6 6	180 14 6	73 2 2	138 5 6	88 1 2	212 15 3
1905-1906	24 18 3	271 2 6	73 5 7	180 2 5	81 17 3	217 14 1½
1906-1907	22 8 6	318 1 4	64 19 0	162 14 0	33 9 0½	198 13 5
1907-1908	36 19 6	288 18 11½	72 19 6	134 14 0	40 0 6½	362 2 11
1908-1909	23 1 3	264 14 6	72 8 0	173 3 5	27 4 4	184 1 6
1909-1910	55 19 3	255 10 11	70 14 0	80 17 0	96 11 9	213 18 3½
1910-1911	53 8 9	278 13 2	62 16 0	143 0 11	104 2 3	266 17 1
1911-1912	30 8 5	298 8 4	71 5 3	85 5 2	89 15 6	177 14 11
1912-1913	29 19 11	298 6 4	67 16 10	85 13 7	94 1 4	168 6 6
1913-1914	35 6 10	341 2 6	100 7 8	127 17 6	88 18 5	217 3 2½
1914-1915	24 11 8	273 17 9	76 15 9	91 6 4	*90 0 9	124 5 5

TABLE NO. XVIII., continued.

Year	Removal of Lunatics.	Scaven- gery.	Furniture Public Depart- ments.	Total Cost.	Amount of Reimburse- ments from contribut- ing Patients, &c.	Cost exclusive of reimburse- ments from Par. Rates, &c.	Weekly Rate per Head.	Admitted during the Year.		
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Males.	Females.	Total.
1874-75	16 19 0	..	..	6,682 18 0	888 1 6	5,844 16 6	0 6 10 $\frac{3}{4}$	46	38	84
1875-76	4 0 0	..	..	6,671 15 1 $\frac{1}{2}$	752 1 6	5,919 13 7 $\frac{1}{2}$	0 6 11 $\frac{3}{4}$	58	43	101
1876-77	17 12 8	..	..	6,473 11 5 $\frac{1}{2}$	827 5 0	5,646 6 5 $\frac{1}{2}$	0 6 3 $\frac{3}{4}$	69	43	112
1877-78	19 0 3	..	..	6,774 6 4 $\frac{1}{2}$	764 18 10	6,009 7 6 $\frac{1}{2}$	0 6 4 $\frac{1}{4}$	54	49	103
1878-79	11 0 6	..	..	7,004 8 11	159 12 10	6,844 16 1	0 7 2 $\frac{1}{4}$	53	51	104
1879-80	14 2 10	..	..	7,007 0 10 $\frac{1}{2}$	168 7 8	6,908 13 2 $\frac{1}{2}$	0 6 11	56	59	115
1880-81	30 9 8	..	..	7,251 9 2	191 7 2	7,060 2 0	0 7 4	65	42	107
1881-82	26 9 6	..	..	6,846 13 2 $\frac{1}{2}$	134 16 1	6,711 17 1 $\frac{1}{2}$	0 7 2	42	56	98
1882-83	25 10 4	..	..	7,061 16 9 $\frac{1}{2}$	189 14 5	6,872 2 4 $\frac{1}{2}$	0 7 2 $\frac{3}{4}$	73	68	141
1883-84	24 13 0	..	..	6,935 14 2 $\frac{1}{2}$	208 6 2	6,727 8 0 $\frac{1}{2}$	0 6 5 $\frac{3}{4}$	80	59	139
1884-85	19 10 0	..	..	6,871 12 6	252 13 2	6,618 19 4	0 6 4	56	64	120
1885-86	28 18 1	..	..	7,027 7 3	376 6 9	6,651 0 6	0 6 8	69	70	139
1886-87	30 11 0	..	..	7,067 10 4 $\frac{1}{2}$	415 15 7	6,651 14 9 $\frac{1}{2}$	0 6 3 $\frac{1}{2}$	79	62	141
1887-88	24 2 9	..	..	7,700 5 6	365 4 7	7,345 0 11	0 7 0	78	71	149
1888-89	15 4 9	..	..	8,781 14 0	391 0 6	8,390 13 6	0 7 4	92	69	161
1889-90 (6 mos.)	10 9 0	..	..	4,755 14 0	151 13 5	4,604 0 7	0 7 7	39	43	82
1890-91	22 1 0	..	..	10,093 10 7 $\frac{1}{2}$	301 10 0	9,792 0 7 $\frac{1}{2}$	0 7 7	93	79	172
1891-92	25 3 6	207 5 0	..	11,578 17 2 $\frac{1}{2}$	471 6 10	11,107 10 4 $\frac{1}{2}$	0 7 8 $\frac{3}{4}$	80	106	186
1892-93	19 3 6	195 12 8	261 0 4	11,453 1 3 $\frac{3}{4}$	532 6 0	10,920 15 3 $\frac{1}{4}$	0 7 7	78	80	158
1893-94	18 7 9	192 19 0	62 0 6	11,280 18 1	492 16 4	10,788 1 9	0 7 2	75	78	153
1894-95	19 6 6	193 9 4 $\frac{1}{2}$	49 5 0	11,648 15 6 $\frac{1}{2}$	384 2 8	11,264 12 10 $\frac{1}{2}$	0 7 3 $\frac{1}{2}$	84	85	169
1895-96	27 7 6	192 0 2	47 8 11	11,867 3 1 $\frac{3}{4}$	418 13 6	11,448 9 7 $\frac{3}{4}$	0 6 10 $\frac{1}{2}$	90	84	174
1896-97	27 12 0	208 4 0	50 0 0	12,901 18 4 $\frac{1}{4}$	458 15 2	12,443 3 2 $\frac{1}{2}$	0 6 10 $\frac{1}{2}$	81	106	187
1897-98	19 0 3	199 11 1	99 14 2	14,061 12 9	532 18 9	13,528 13 1	0 6 10	109	95	204
1898-99	39 10 9	126 0 11	..	13,651 4 1	359 10 8	13,291 13 5	0 6 7	88	80	168
1899-1900	24 13 6	104 5 3	..	13,559 10 1	454 9 1	1,305 1 0	0 6 4	96	93	189
1900-1901	26 4 3	116 12 7	163 0 4	14,445 3 2 $\frac{1}{2}$	525 8 5	13,919 14 9 $\frac{1}{2}$	0 6 4	104	96	200
1901-1902	29 5 9	115 12 6	42 12 0	14,759 17 8	547 3 10 $\frac{1}{2}$	14,212 13 9 $\frac{1}{2}$	0 6 4	99	83	182
1902-1903	22 6 9	111 10 5	94 12 11	15,029 0 6	517 18 1 $\frac{1}{2}$	14,511 2 4 $\frac{1}{2}$	0 6 1	118	108	226
1903-1904	17 5 9	22 0 5	35 10 6	16,017 7 10	406 6 2	15,611 1 8	0 6 2	105	101	206
1904-1905	19 18 0	17 17 1	50 18 0	16,006 5 3	449 9 2	15,557 12 10	0 5 10	124	116	240
1905-1906	30 11 3	3 18 0	190 17 10	16,852 9 7 $\frac{1}{2}$	631 19 11 $\frac{1}{2}$	16,220 9 8	0 5 11	134	96	230
1906-1907	35 18 3	..	4 19 6	16,298 17 10	654 4 3 $\frac{1}{2}$	15,644 13 0 $\frac{1}{2}$	0 5 10	109	125	234
1907-1908	30 12 9	2 16 3	..	17,078 8 3	474 1 3	15,604 7 0	0 6 3 $\frac{1}{4}$	148	131	279
1908-1909	22 11 0	1 11 8	..	17,786 8 11	633 5 10 $\frac{1}{2}$	17,153 3 0 $\frac{3}{4}$	0 6 5	114	123	237
1909-1910	22 2 3	0 12 6	70 2 1	17,453 7 7 $\frac{3}{4}$	459 16 1	16,993 11 6 $\frac{3}{4}$	0 6 1 $\frac{1}{2}$	139	123	262
1910-1911	39 6 4	..	68 15 1	19,131 15 7	723 3 3 $\frac{1}{4}$	18,408 12 3 $\frac{3}{4}$	0 6 0	164	160	324
1911-1912	31 15 10	1 18 3	133 7 8	17,797 1 2	866 11 8 $\frac{3}{4}$	16,930 9 5 $\frac{1}{2}$	0 5 5 $\frac{3}{4}$	138	120	258
1912-1913	30 1 7	5 14 2	213 12 4	18,414 4 1	889 13 3	17,524 10 10	0 5 4	160	189	349
1913-1914	49 0 11	3 6 11	47 6 1	19,613 14 8 $\frac{1}{2}$	1103 1 9 $\frac{1}{2}$	18,510 12 11	0 5 4 $\frac{3}{4}$	162	156	318
1914-1915	37 16 8	0 16 0	64 18 10	20,336 18 10	1166 13 4 $\frac{1}{4}$	19,170 5 5 $\frac{3}{4}$	..	158	171	329

Year.	Lighting.	Clothing and bedding.	Equipment.
	£ s. d.	£ s. d.	£ s. d.
1907-1908	166 9 2	—	—
1908-1909	303 0 10	—	—
1909-1910	311 11 8	791 1 6 $\frac{3}{4}$	141 12 0
1910-1911	463 13 4	1,261 8 8	259 9 0
1911-1912	423 9 9	1,079 15 4	153 8 10
1912-1913	399 13 9	1,351 0 6	171 3 6
1913-1914	386 7 2	1,310 9 4	213 15 6
1914-1915	338 3 3	1,447 6 11	232 15 4

NAME	RESIDENCE	DATE	REMARKS	REMARKS	REMARKS
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100
J. H. B.	N. Y.	1880	100	100	100

LEPERS' HOME.

Report for the year ended 31st March, 1915.

Jamaica Leper Asylum, 26th May, 1915.

Sir,

I have the honour to submit the Annual Report on this Institution for the financial year which terminated 31st March, 1915.

1. The staff have performed their duties in a very efficient manner.

2. *Discipline*.—I am glad to report that the conduct of the inmates during the year has been all that could be desired. No serious breaches of the rules were committed.

3. *Occupation*.—The Farm is in good cultivation. Practically all the vegetables and sweet potatoes used in the Asylum are grown by the inmates, and the washing of all the institution clothing is done by the female inmates.

4. *Gifts*.—I have to thank the Hon. G. McGrath, Mrs. Hathaway of New Jersey, U.S.A., Mrs. T. H. Sharpe, The Jamaica Institute, Mrs. Berry, The Educational Supply Co., Jamaica Times, Ltd., The Treasury Magazine Club, per Mr. W. M. Fraser, for Books and Magazines. Mis Marvin for a box of presents for the children and Miss Muriel Andrews very kindly sent a box of dolls for them. The Jamaica Tobacco Co. for a present of tobacco and His Honour the Custos and Mr. H. C. Bennett for valuable gifts of fruit.

5. Religious ministrations are preformed by the Rev. Canon Hendrick and Father Grewen, S.J. They are assisted by Miss Mackglashan and Miss Leon, and members of the St. Andrew's Brotherhood.

6. *Statistics*.—There were 19 admissions, none being re-admissions. The death rate, 7 per cent., was very low. The longevity of the diseases in those who died was as follows:—

Anaesthetic	Males	Nil
	Females	15 years 2 months
Tubercular	Males	9 "
	Females	11 years 9 months

The usual statistical tables are attached.

7. *The Treatment of Leprosy*.—The treatment by "Antileprol" has been continued in suitable cases during the year. When the drug is administered in cases which present themselves in the early stage of the disease the results are excellent and most encouraging. The supply of Chaulmoogra Oil from India has been delayed on account of War.

I have etc.

W. D. NEISH, M.D.,
Medical Superintendent.

The Suptg. Medical Officer, Kingston.

LEPER ASYLUM.

TABLE No. 1.—Return General Statistics for 1914 to 1915.

		Males.	Females.	Total.
Remaining in Asylum 31st March, 1914	..	66	54	120
Admitted during 1914 to 1915	..	13	8	21
Discharged 1914 to 1915	..	2	3	5
Absconded 1914 to 1915	..	5	3	8
Died 1914 to 1915	..	5	5	10
Remaining 31.3.15	..	67	51	118

TABLE No. II.—Comparative Statistics from 1st October, 1878, to 31st March, 1915.

Year.	Admissions:		Discharges.		Deaths.		Remaining at end of Year.		Death rate per 100.	Re-admission of Lepers.
	Lepers.	Non-Lepers.	Lepers.	Non-Lepers.	Lepers.	Non-Lepers.	Lepers.	Non-Lepers.		
1878-79	26	39	2	40	10	3	40	31	10.31	..
1879-80	26	43	8	31	7	..	51	33	5.	..
1880-81	39	101	16	72	11	4	63	58	6.69	..
1881-82	38	115	23	107	13	5	65	61	6.50	..
1882-83	40	85	22	96	8	3	75	47	4.38	..
1883-84	30	71	26	63	9	3	70	52	5.38	..
1884-85	33	87	18	80	14	..	71	59	5.78	..
1885-86	39	131	17	114	16	2	77	74	6.	..
1886-87	25	141	17	130	16	6	69	79	6.94	..
1887-88	32	8	..	19	23	8	78	60	16.48	..
1888-89	31	93	4	98	11	6	94	49	6.48	..
Oct. '89 to March '90	9	22	6	35	12	2	82	37	8.04	..
1890-91	34	67	15	88	15	2	86	14	7.74	..
1891-92	38	2	8	9	15	2	106	5	12.16	..
1892-93	26	1	16	4	1	..	100	2	8.27	..
1893-94	23	2	24	3	20	..	79	1	15.74	7
1894-95	26	1	12	..	18	..	75	2	16.82	14
1895-96	37	2	8	4	10	..	94	..	8.62	10
1896-97	40	2	11	2	16	1	106	..	12.5	9
1897-98	38	1	3	2	13	..	127	..	8.96	3
1898-99	20	2	8	3	20	..	118	..	13.6	5
1899-1900	27	3	3	2	20	..	122	1	13.5	6
1900-01	19	3	6	2	15	..	120	2	10.3	1
1901-02	9	1	4	..	14	2	110	2	11.4	2
1902-03	19	..	2	2	17	..	108	2	13.	3
1903-04	33	3	5	3	20	..	117	1	13.7	1
1904-05	25	..	5	..	23	..	114	1	16.1	2
1905-05	19	..	3	..	14	..	115	1	10.4	3
1906-07	14	..	1	..	15	..	113	1	11.62	1
1907-08	12	..	5	1	14	..	105	..	11.1	..
1908-09	24	..	..	1	15	..	112	1	11.6	4
1909-10	12	1	7	..	10	6	102	2	12.27	..
1910-11	24	..	6	1	15	1	103	1	12.6	4
1911-12	25	1	5	1	10	..	113	1	7.7	1
1912-13	12	2	2	1	14	..	109	2	10.9	2
1913-14	21	1	5	..	8	..	117	3	6	..
1914-15	19	2	12	1	9	1	115	3	7	..

TABLE No. III.—Return of Admissions for 1914 to 1915.

No.	Name.	Age Years.		Form of Leprosy.	Years afflicted.	If re-ad- mitted.	Country.	Late Residence.	Date of Admission
		M.	F.						
1	Ed. Stanbury	25	..	T.	3	No	Jamaica	Clarendon	15.4.14
2	Emily Morgan	..	41	A.	4	No	"	"	16.4.14
3	Mary Jane Campbell	..	20	T.	2	"	"	St. Ann	23.5.14
4	Rosa Dias	..	40	T.	4	"	"	St. Elizabeth	20.6.14
5	Elizth. Lawrence	..	56	A.	6	"	"	Westmoreland	27.6.14
6	Norman Fray	14	..	Non- Leper	2	*	"	Trelawny	7.8.14
7	Sarah Lothian	..	50	A.?	5	"	"	"	7.8.14
8	Vincent Josephs	35	..	T.	8	"	"	Manchester	11.8.14
9	Chen W.	26	..	T.	1	"	China	Kingston	28.8.14
10	Josiah Brown	30	..	T.	3	"	Jamaica	Manchester	3.11.14
11	Edward Burris	70	..	T.	2	"	"	Clarendon	25.11.14
12	Ann E. Less	..	40	T.	2	"	"	Manchester	2.12.14
13	H. W. Dunkerley	47	..	T.	5	"	"	St. Catherine	4.1.15
14	Alex. Hamilton	60	..	A.	1	"	"	"	9.1.15
15	Arthur Chin	26	..	T.	2	"	China	St. Andrew	14.1.15
16	Ina Burris	..	25	T.	3	"	Jamaica	Clarendon	27.1.15
17	Marie Codlin	..	3	A.	3	"	"	St. Catherine	10.2.15
18	Abdul	35	..	A.	1	"	India	Kingston	15.2.15
19	N. Williams	37	..	A.	1	"	Jamaica	Clarendon	15.2.15
20	Cyril Lyon	14	..	T.	3	"	"	"	10.2.15
21	Henry Scott	15	..	Non- Leper	3	"	"	St. Thomas	21.3.15

TABLE IV.—Birthplaces of Admitted 1914 to 1915.

Birthplace.	Male.	Female.	Total.	Remarks:
Clarendon	4	2	5	
St. Ann	—	1	1	
St. Elizabeth	—	1	1	
Westmoreland	—	1	1	
Trelawny	1	1	2	
Manchester	2	1	3	
Kingston	2	..	2	China 1 } admitted from Kingston
				India 1 }
St. Catherine	2	1	3	
St. Andrew	1	..	1	China 1 admitted from St. Andrew
St. Thomas	1	..	1	
	13	8	21	

TABLE V.—Return of Discharged 1914-1915.

No.	Names.	Age Years.		Date of Admission.	Date of Discharge.	Total years Afflicted.	Form of Leprosy.	Remarks.
		M.	F.					
1	Jas. Brown	50	..	31.1.1914	13.4.14	2	A.	Absconded
2	Sarah Reid	..	40	16.3.14	15.6.14	..	Non- Leper	Sent to Lunatic Asylum
3	Dan Matt	..	30	30.1.14	15.7.14	?1	A.	Absconded
4	F. Lindo	..	12	30.9.10	8.8.14	6	T.	Sec. 9 Law 15 of 1896
5	N. May	53	..	7.8.12	31.12.14	7	T.	Absconded
6	R. Bryce	35	..	19.1.14	31.12.14	3	A.	"
7	Jas. Christie	50	..	11.8.11	31.12.14	1	A.	"
8	Clun. Campbell	..	13	19.5.10	31.12.14	1	A.	"
9	Rosa Dias	..	40	20.6.14	31.12.14	4	T.	"
10	F. Pink	23	..	14.1.05	31.1.15	1	T.	"
11	Ira Graham	9	..	6.6.05	14.2.15	3	A.	Sec. 9 Law 15 of 1896
12	Adina Ashman	..	20	26.8.96	19.2.15	2	T.	"
13	John Lenon	27	..	17.12.13	9.3.15	2	T.	Sec. 8 Law 15 of 1896

TABLE No. VI.—Birthplaces of those discharged, 1914 to 1915.

Birthplace.	Male.	Female.	Total.
Kingston	..	1	1
India ..	..	1	1
Westmoreland	..	1	1
St. Elizabeth	..	1	1
Manchester	..	1	1
Clarendon	5	1	6
Trelawny	1	..	1
St. Ann ..	1	..	1
	7	6	13

TABLE No. VII.—Return of Deaths for 1914 to 1915.

No.	Names.	Years Age.		Country.	Date of Admission.	Date of Death.	Form of Leprosy.	Total Years Afflicted.	Cause of Death.
		M.	F.						
1	Armand Irving ..	28	..	Jamaica.	15.5.1896	29.4.1914	T.	9	Chronic Diarrhoea
2	Chas. Murdock ..	48	..		129.12.1914	27.5.1914	T.	12	"
3	Janet Garcia ..	..	67		30.1.1895	18.6.1914	A.	21½	"
4	Edward Stanbury ..	25	..		15.4.1914	14.7.1914	T.	3	"
5	Angelina Johnson ..	..	46		26.6.1913	23.7.1914	A.	3	"
6	Alex. Mathieson ..	25	..		30.4.1909	24.8.1914	T.	8½	Aneurism Aortic
7	Sarah Lothian ..	..	50		7.8.1914	30.9.1914	Non-Leper	..	Pul. Tuberculosis
8	Rosey A. Gallimore ..	..	25		26.11.1903	14.11.1914	A.	21	"
9	Carmelitta Thornley ..	..	18		15.1.1914	8.12.1914	T.	5	"
10	H. Lindo ..	19	..		30.9.1910	23.1.15	T.	12	Chr. Nephritis

Average longevity of the Disease in those who died.

Anæsthetic	Males	Nil
"	Females	15 years 2 months
Tubercular	Males	9 "
"	Females	11 years 9 months.
General Death rate	..	7 per 100.

TABLE No. VIII.—Birthplace of Deceased, 1914 to 1915.

Birthplace.	Male.	Female.	Total.
Kingston	2	2	4
St. Ann	..	1	1
Trelawny	—	1	1
St. Catherine	..	1	1
Clarendon	1	..	1
Portland	1	..	1
St. James	1	..	1
	5	5	10

TABLE IX.—Chief Inter-current Diseases treated during 1914 to 1915.

Disease.	Form of Leprosy.						Other Diseases.	Total.		Grand
	Tubercular.		Anæsthetic.		? Leprosy.			M.	F.	
	M.	F.	M.	F.	M.	F.				Total.
General Diseases—										
Malarial Fever ..	40	35	20	15	4	5	..	65	55	120
Syphilis ..	..	..	..	..	..	..	3	..	..	3
Dysentery ..	12	20	9	16	..	..	..	21	36	57
Tuberculosis ..	4	3	..	..	..	..	..	4	3	7
Diseases of Nervous System—										
Epilepsy ..	..	..	..	..	..	..	1	1	..	1
Neuritis ..	10	5	15	30	..	..	..	25	35	60
Diseases of Eye—										
Conjunctivitis ..	55	50	40	15	..	..	..	95	65	160
Iritis ..	30	45	30	35	..	..	..	60	80	140
Diseases of Nose —										
Rhinitis ..	30	25	45	25	..	..	..	75	50	125
Diseases of Digestive System—										
Diarrhœa ..	90	75	100	75	..	..	..	190	150	340
Indigestion ..	100	105	130	80	..	..	..	230	185	415
Constipation ..	95	85	75	85	..	..	..	170	170	340
Urinary System—										
Nephritis ..	15	10	10	5	..	..	..	25	15	40
Skin—										
Ulcers ..	140	130	85	100	..	..	..	225	230	450

